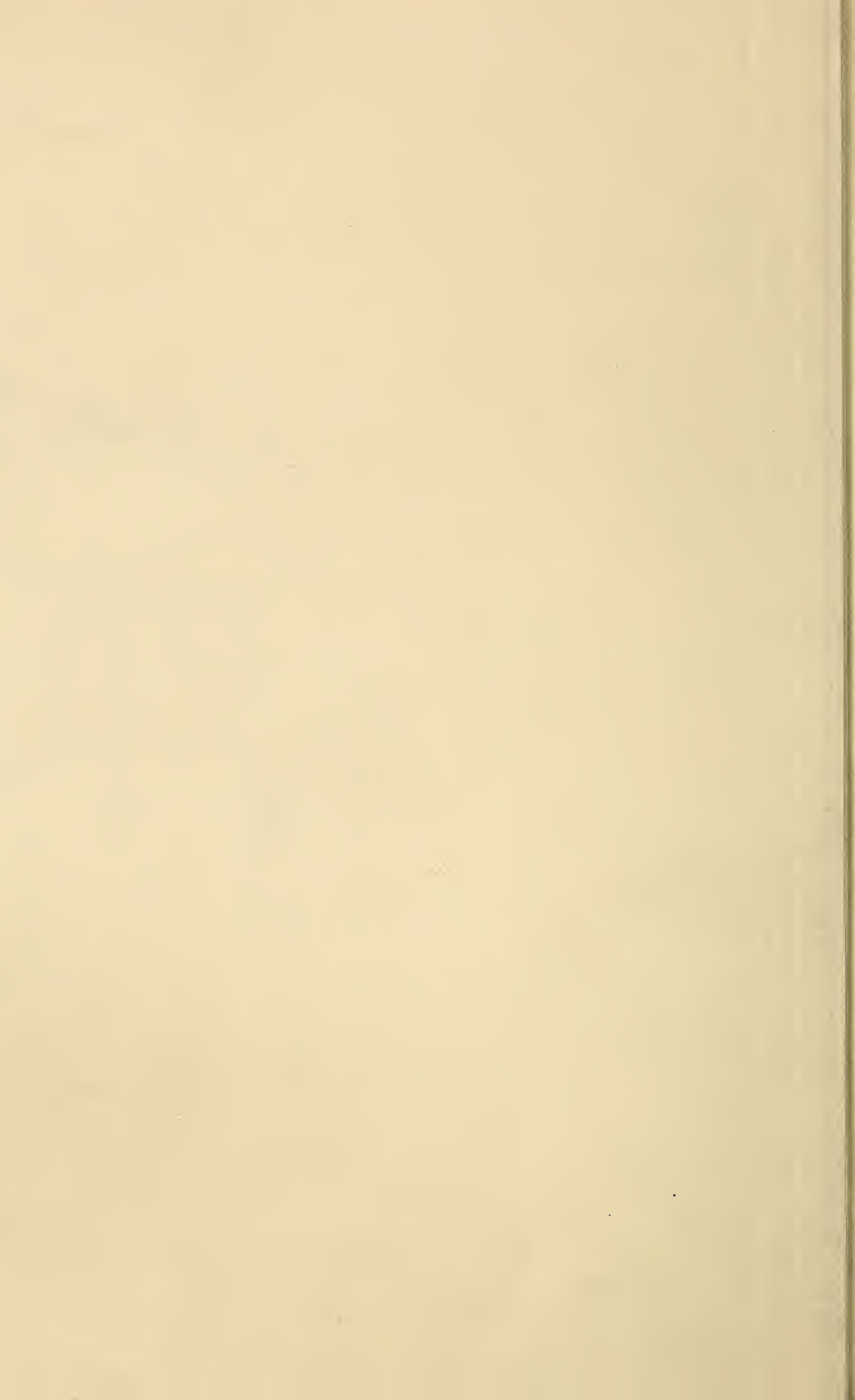


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# GLEANINGS

A JOURNAL DEVOTED  
TO BEES  
AND HONEY  
AND HOME  
INTERESTS.

## BEE CULTURE

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### STRAY STRAWS

FROM DR. C. C. MILLER.

THE SUN WAX-EXTRACTOR, says W. Fitzky, in *Centralblatt*, was invented by G. Leandri, who exhibited it in 1881, and it was afterward notably improved by Dr. Dubini.

WITH A BUILDING that is separate, and specially arranged for it, the Trans-Mississippi Exposition honey show will easily eclipse that of the World's Fair. Then it's something to have the right man at the head of it.

HOW MANY COLONIES can be kept in one apiary with only white clover? is asked in *Australian Bee Bulletin*. No light is given, except that some have no white clover, and with others it's a very uncertain honey-plant.

THAT PLAN for prevention of swarming, given by Doolittle, p. 16, is well worth trying. But for those who expect to be on hand to see swarms, as does his querist, I know a better plan, and one which I practiced with a great deal of satisfaction. It's the "Doolittle plan." Make him tell it.

STAPLES for spacers seem to be so much used in France that they are listed in the extensive catalog of R. Gariel. [And yet you do not like staples, doctor. Suppose you try them again this coming summer. They will not punch into the wood like a nail-head, neither are they so naughty about catching in the wire cloth, or in hitching and catching in getting the frames past each other into position in the hive.—ED.]

YOU WANT ME, Mr. Editor, to point out the culprit guilty of saying "new beginner." Of course, you want me to give you page and line where it will be found in GLEANINGS. Well, you can breathe easier. I don't know that GLEANINGS is guilty. It's the other fellows. [We draw an easy breath, doctor. The term "new beginner" is such a natural, easy one, that we find ourselves obliged to be on the watch for it continually. But say, doctor, why don't you hit the other fellows direct?—ED.]

THE *Australian Bee Bulletin* mentions what it calls an excellent suggestion by a cor-

respondent, "that the government, while leasing land for wool-raising, also lease the same land for bee-farming—one not to interfere with the other—the government giving the squatters the grass, the bee-keeper the tops of the trees, and a radius to which he would be protected from other bee-farmers." Some fellow who didn't know any too much once urged something a little in that line on this side the globe.

STATISTICS FOR FRANCE for 1895 have just been published in *L'Apiculteur*. Total colonies, 1,615,061. Total honey, 17,621,672 lbs.—about 11 pounds per colony. Total wax, 4,867,219 lbs.—about 3 lbs. per colony. Average price of honey, 12½ cts. a pound; of wax, 20 cts. a pound. [Honey statistics for France may be reasonably correct; but the statistics that have been offered by our own government, detailing the extent and importance of the bee-keeping industry, were wide of the mark.—ED.]

NOW JUST SEE, Ernest, what a mess you've made of it, by meddling in that joke I had on your father, p. 6. I said the *Golden Rule* was behind the times, and he ought to read *Christian Endeavor World*, and then you go to talking about other papers, when the joke was that there was no such paper as the *Golden Rule*, the name having been changed to *Christian Endeavor World*. Of course, that slipped his mind. [I wanted to say what I have desired to say for a long time; and it seemed opportune to bring it in right then and there, even if it did make a mess of your joke.—ED.]

A CASE is minutely related in *Australian Bee Bulletin*, in which a virgin queen stung a worker to death. I was once eye-witness to a similar case, and my reputation for veracity suffered because I didn't keep it to myself. L. B. Smith, in *Southland Queen*, says he saw a virgin queen sting to death three workers in rapid succession. [After your veracity was questioned at the time, reports came in very shortly, verifying your statement. Facts are facts, and we can't get around them, even if they do seem improbable.—ED.]

A CORRESPONDENT stumbles at that statement, p. 777. That queens not fertilized this fall will stand a good chance to be mated next spring. What do we know definitely about the matter, anyhow? Is there any clear proof



that a queen reared in the fall will be fertilized in the spring? [I might as well be frank, and confess that my statement on page 777 is stronger than I meant it to be. I meant to say there was a chance of late-reared queens being fertilized in the spring. I based part of my authority on the fact that Doolittle said so, and that our own experience has seemed to indicate it pretty strongly.—ED.]

NO, DECIDEDLY, positively, and emphatically, an entrance  $\frac{3}{8}$  deep, and the whole width of the hive, is not enough to satisfy me. A chance for a current clear through is needed. For comb honey,  $\frac{3}{8}$  front, back and sides, is none too much; for extracted,  $\frac{3}{8}$  at front and  $\frac{1}{2}$  at top of back end. [I almost believe you are right, doctor, although I do not want to believe it. But what would be the harm of having an entrance at both ends,  $\frac{3}{8}$  inch deep? If you are right, beyond a question, then we supply-dealers had better make our hives so there will be an entrance at both ends of the bottom-board. Now, who will be the smart inventor to get up something to close up the rear entrance neatly and quickly?—ED.]

QUITE GENERALLY it is supposed that late feeding induces late laying. G. de Layens says this is a mistake, according to some cases he has noted, the intensity of the laying fading out toward the close of the season, not to be rekindled again even by a late natural honey-flow. Possibly this point needs fresh investigation. [My own experience in feeding would lead me to think that G. de Layens was probably right. Some years ago we practiced stimulative feeding late to get brood-rearing started for the purpose of getting bees in colonies that were made up almost entirely of old bees. But such colonies would not commence brood-rearing, nevertheless. They simply stored the feed, capped it over, and made preparation generally for winter.—ED.]

JOSEPH LANGER, according to *Centralblatt*, has been investigating the poison of the honey-bee, and finds its poison proper not formic acid, as heretofore supposed, but an organic base whose exact composition is not yet known. The sting of a bee was kept for six weeks at the temperature of boiling water, and then applied to the eye of a dog. The phenomena produced were identical with those of the fresh poison. Those who were skeptical as to my statement a few years ago, that the sting from a bee that died in the fall was effective in mid-winter, may gag a little at that last statement. [I am glad that somebody has taken up this question. We know too little about the poison from bee-stings, and I hope Herr Langer will pursue his investigations further.—ED.]

ISN'T THAT ADVICE, p. 17, to extract and level unfinished sections, rather dangerous? If granulation has not already commenced, it surely will commence in the honey left after extracting, and that will spoil any honey the bees may store in the sections. Better sell those sections cheap, or else melt 'em up. [I implied in that advice, on page 17, or meant to, at least, that, after the honey was extracted, the bees should be allowed to have access

to the combs, and clean them out, after which they may be leveled down. I do not believe it is good policy generally to put second and third rate honey on the market, even if we do sell it cheap. Better extract it. I know that is the policy of most of the York Staters, and I have come to believe that they generally do things about right.—ED.]

VENEERS in shipping-cases are talked about as a necessity with no-bee-way sections. Now, really, are they a necessity? I've been shoving some Danzy sections around on a table, and I can't see any chance of spoiling them so long as they keep on the table. The only danger I see is when you slide the last row in the case; but a single veneer would do as well for that as more; and, with care, would even one be needed? [Perhaps you could get along without veneers, doctor; but all producers may not have their honey as solidly fastened to their sections as you do; and, moreover, freight-handlers may some day dump *your* honey, and make you wish that veneers had been stuck in between the rows of your cased honey. The best way to convince you, doctor, is to go into the business of buying and selling honey; then you'd say, "Producers can not take too much caution."—ED.]

I'VE JUST BEEN EATING the most delicious honey caramels I ever tasted. The secret is in having them a trifle underdone. Too much cooking hurts the delicate honey flavor. [You did not say, doctor, that the honey caramels you were telling about were made after your recipe, in the honey-leaflet written by yourself. We have had a good many reports from those who have tried your honey-caramel recipe, and they all say "it works to perfection." By the way, I am not sure but some enterprising baker or candy-maker might develop quite a business in making and selling honey caramels. If some one will do it we will give him a two-inch advertisement three insertions free. Now, here is a chance for some enterprising man or woman to make a little money. I should like to have people know that honey caramels are the nicest caramels in the world.—ED.]

WHEN SWARMS cluster on a high limb, and you want to shake down the cluster, the *Australian Bee Bulletin* says, tie a stone on the end of a rope, throw the stone over the limb, then shake. Is that meant as a blow to bee-keeping by women? [Throwing a stone over a high limb with a cord attached to it is quite an idea. I know it will work with almost any man or boy. In hiving swarms into a hiving-basket, I have sometimes found it necessary to keep the limb, upon which the bees have previously clustered, on a continual joggle, because bees are almost determined to go back to the original limb. Sometimes, in dislodging the swarm from a high position into a basket, and then carrying it down laboriously from the tree, quite a lot of bees will still go back to the old limb. Well, now, if a rope were attached so that some one could jerk continuously, these same bees would go where the rest of the swarm was—into the hiving-basket. Say, doctor, what makes you

keep throwing stones at the poor women? You might find that some of them can throw straight enough to hit you, if you do not look a "leedle oud."—ED.]

## GENERAL CORRESPONDENCE

### DO BEES PAY?

Some Interesting Figures: \$5.00 Per Day for Time Spent among Bees.

BY DR. C. C. MILLER.

I have made an honest effort, Mr. Editor, to comply with your request to make a guess at the amount of work involved in getting this year's crop of honey. It can only be a guess at best; but in looking up the meager memoranda I had to base even a guess upon, it occurred to me you might be interested therein.

Taking the year as you have suggested, from the time of putting bees in winter quarters last fall to this fall's cellaring, I find the bees were carried into the cellar Nov. 16 and 17, 1896, the weather being so warm that we could carry only morning and evening. Four of us carried; but I'll reduce the work in each case, for easy calculation, to the work of one hand, and call it three days' work to cellar the bees; 260 colonies were cellared, 10 being packed on summer stands, 8 of which lived through. Circumstances were most favorable for getting bees in winter quarters in best condition. Nov. 13 the thermometer stood 13° above zero. Nov. 15 it was 60°, and the bees had a fine fly. Then the right thing was to hushe them in before they endured another cold spell to make them fill themselves.

The winter was mild, and no fire was in the cellar till Jan. 27, when it was kept up for 4 days, the only fire of the winter. March 6, dead bees swept out for the first (ought to have been sooner). Perhaps 1½ bushels dead bees were swept out. March 29 it was again swept, yielding perhaps a bushel of dead bees. Aside from this the bees had little attention through the winter, the doors being opened when mild enough, and an occasional excursion made into the cellar to see if it smelled sweet. All together, two days' time would probably cover the winter care.

About the middle of March, T tins and supers were cleaned, making perhaps six days' work. March 20 we began the work of putting foundation in sections, top and bottom starters, and putting sections in supers. This took perhaps 27 days' work, being finished April 21. Two days' work got the bees out April 7, after an imprisonment of 141 days. Eight days' work may be charged for getting the bees to the two out-apiaries, and doing some little work there. In this I count the work of the team as one man, and you will notice I make no mention as to whether any

outside help was called in or not, just lumping all together, and then giving the sum total, just as if the whole had been done by one man.

After the shop work was done, April 21, about ten days would cover the work in the apiaries till May 1.

Then the fun began. It was a mixed season—sometimes discouraging, sometimes encouraging beyond precedent. Some memoranda from my record-book may not be amiss.

May 5. Bees working hard on dandelion and hard maple.

May 9. Apples in bloom.

May 24. Saw a white-clover blossom.

May 26. Have 239 colonies to begin season (I had decided to unite down to 240, but got it one less than that).

May 31. Too cool for several days for bees to do any thing.

June 9. Been cold for days—some colonies at point of starvation. Clover very abundant. To-day warm, and fresh honey shakes out of combs.

June 14. Hot. Some supers nearly filled.

June 16. Honey coming in such a flood that some supers are about full, and two additional supers were given to most colonies.

June 17. Mercury 90°; keeps us on the jump to keep up with the work.

June 18. Blocked up the hives  $\frac{3}{4}$ -inch to an inch. (Might have been done sooner.)

June 22. Much cool weather.

June 24. First sweet-clover bloom.

June 26. Took off first finished super.

July 2. Have 316 supers on the hives at Wilson's. (That lacked only 12 supers of averaging 4 supers to the colony. And I may as well say here, that, before the season was over, I was pretty badly scared. Having 48 to 120 sections on a hive, pretty well filled with honey, and not a section sealed, and the bees threatening to stop work, was enough to send the cold chills down one's back. As things finally turned out it was all right, but it was running a big risk.)

July 5. Lindens out. (So few they don't count much.)

July 8. Mercury 100°. Grand flow.

July 12. Cool and rainy.

July 13. Had terrible day at Hastings. Cold, and bees furious. Have 113 finished supers now in house. Philo empties supers as fast as we take them home; fills supers with "go-backs" (unfinished sections), which we return to hives.

July 14. Robbers trouble.

July 26. Been very dry at Hastings and home, but bees still work at Wilson's. Fine rain last night.

July 29. Bees take fresh hold, and work hard at Hastings.

Aug. 3. Have 10,008 finished sections in house.

Aug. 9. Bees take fresh hold at home.

Aug. 10. Took off 65 finished supers at Wilson's.

Aug. 11. Heavy work at Hastings. Have 13,200 finished sections in house.

Sept. 4. Took off all supers.

Sept. 20. Commenced scraping sections, and packing, ready for shipment Oct. 5.



It's a very hard thing to make any kind of estimate as to the amount of time put in from May 1 to Oct. 5. We worked on the eight-hour system—eight hours in the forenoon and eight hours in the afternoon; but I had a good deal of writing to get in. Sometimes I'd be up at 3 o'clock, and not get to work in the apiary till 9 or 11 o'clock. Then there were some breaks—a week at the Buffalo convention, and some time for Sunday-school conventions. (You're mistaken, Mr. Editor, in thinking I spend some time tending posies, and mowing "weeds and things." I had to give all that up, but am blessed with a brother-in-law who has taken the job off my hands, and the only hard farm work I did through the summer was to eat the big strawberries after they were on the table.) After some thinking, estimating, and guessing, I've settled upon 220 days' work as possibly about the right thing for that five months or more.

For the rest of the time till the bees were home (Oct. 18) ready to be put in the cellar, 15 days may not be out of the way.

Adding up the different items, it makes a sum total of 293 days of ten hours each for the year's work. Dividing it between two of us, it makes 146½ days, or a little more than 24 weeks—not quite half the year. I confess that's not as much time as I should have guessed at a lump, but I've tried to guess as fairly as I could at the different items. You're welcome to add or subtract, as you like.

Marengo, Ill., Dec. 10.

[There, now, doctor, I'm satisfied you've given us just the information we wanted. Let's see what the figures mean. In those 293 days for one person, 17,150 lbs. of comb honey was produced and marketed. This would make a credit of 58½ lbs. of comb honey for each day's work for one person. Putting this honey at wholesale at 10 cts. would make each day's wages amount to \$5.85. From this I take 85 cents as covering the cost of sections foundation, shipping-cases, interest, etc., making \$5.00. The rate per day would be the same whether two people were employed 146½ days or whether one person worked 293 days. Considering that one of the persons was your sister, and that you yourself the other one, are not as strong as the average of men, the rate \$5.00 per day for each of you is not bad.]

Perhaps, doctor, you don't care to have your private income lugged before the public in this fashion, especially when some other fellow makes the figures. But if those I have made are not far from right, they go to show what *can* be done in a good year by a good bee-keeper.

Say, doctor, we shall read your articles more closely than ever from now on, to see if we can do as well, some of us. While I believe you sold your honey for more than 10 cts., I suppose it is but fair and right that we say you can't average such a yield from year to year, or at least haven't done it, owing to poor seasons.

But, say; I can't help feeling that raising those hives up ¾ inch off the bottom is very important. Can you tell us how much honey this saved for you, or how many swarms it prevented?—Ed.]

## TWENTY-SEVEN YEARS' EXPERIENCE.

### Some Curious Notions of "Old-Timers" at Bees.

BY A. E. MANUM.

Not long since the question was asked by a correspondent of GLEANINGS, "Is it safe for a man with a family to depend upon bee-keeping alone for the support of his family?" Now, Mr. Editor, I feel like answering this inquirer by giving your readers a synopsis of my experience as an apiarist, which dates back nearly 27 years, and at the conclusion of my story the questioner may draw his own conclusions as to whether bee-keeping *alone* is a safe occupation to rely upon.

In March, 1871, a neighbor offered to loan me Quinby's "Mysteries of Bee-keeping." I told him I was afraid of bees, and would not have a colony on my premises. But he insisted that I was just the man for the business, inasmuch as I was greatly interested in fruits and gardening, and really urged me to take the book home and read it. To please him I carried the book home, but did not intend to read it. I was then engaged in the harness business, employing four to five men the year round, and was satisfied with each year's "round-up." But one evening I took up the book and looked over the pictures, and happened to cast my eyes upon large figures which pointed out the great profits derived from one colony of bees. Well, I thought I would read about it, so I commenced at the beginning, carefully reading page after page, and truly it was past eleven o'clock when I retired that night; and, do you believe, Mr. Editor, the very next day I bought two colonies of bees? It came about in this way:

A farmer came into my shop to buy a harness, and wanted to pay a portion of the price of the harness in barter, such as wood, potatoes, apples, etc. This man, I knew, had bees, and this was my chance. I sold him a harness and took two colonies of bees, at \$5.00 each, for the barter part of the harness trade. I could not wait for warm weather before moving home the bees, so I moved them at once. Knowing they were in old box hives, and on their summer stands, I wanted to get them into my cellar, where I could visit them often, and that I did nearly every evening, tapping on the hives to hear them hum.

I am amused now when my thoughts revert to those days when I was so *wise*. Oh! I knew *all* about bees. Yes, Mr. Editor, I had the "Mysteries of Bee-keeping" at my tongue's end; and the way I lectured to those old bee-keepers of "forty years' experience" was not "slow," I assure you.

How many of these old-time bee-keepers would say to me, "Why, young man, I have kept bees for *forty* years, and I never saw a queen, and now you tell me that the queen" (some would say king-bee) "does not rule the swarm, and that she lays all the eggs"!

Another would say, "Young man, you can't make me believe that wax is a natural product of bees, and that it comes from their bodies, for I have seen them carry it on their legs."

I remember one said, "My father kept bees as long ago as I can remember, and I have kept them for thirty years, and I never heard before that they live only ten weeks. Why! I now have a swarm that grandfather gave my father fifty years ago, and they are alive yet, and it is the best swarm I have got. They have swarmed every year except one, and that was the year father died. That year they neither swarmed, nor made any honey; therefore your theory that bees don't know when there is a death in the family is all bosh. Why! the summer that father died, our bees all died except this one swarm, and I suppose they too would have died, only that they were once grandfather's."

I was obliged to listen to such talk by a few old-time bee-men. Not all were as wise. Very many seemed interested in my talk, and in the course of two or three years were induced to adopt improved hives and new methods. But, oh how wise I was! Surely, Mr. Editor, I knew four times more about bees than than

### THE BEE-SPACE.

Is the Box-hive Better for the Farmer? Closed-end Frames for Wintering.

BY F. GREINER.

It is now forty-five years since father Langstroth in America and Baron von Berlepsch in Germany, unbeknown to each other, invented and gave to the world the hanging frame with the bee-space around its different parts. This bee-space is rather the most important part of the invention; no other has so revolutionized bee-keeping as that. By it we have gained control of our bees in a measure not dreamed of before. It is true, the well-known and still living Dr. Dzierzon invented his bar-hive seventeen years prior; but, although Dzierzon accomplished with his bar hive wonderful things, the bee-keeper of the present day can hardly afford to use it. When the reader imagines that each and every comb will have to be cut loose on both ends before it can be moved, I



I do now, viewing the past from my present standpoint.

In April my two swarms were set out under an apple-tree in my garden; and many a day, after dinner, I would go out and watch the bees until the afternoon was well advanced, and I would often find customers waiting for me; but in those days my bees were of more consequence to me than were customers—at least they were uppermost in my mind. In due time they were transferred into movable-frame hives of the American pattern. Were I to tell you, Mr. Editor, of my experience in transferring my first swarm you would laugh yourself hoarse, but I will not take up space to relate that trying experience. In my next I will tell you of my first crop of honey, which netted me in Boston, Mass., 33½ cts. per lb.

*Continued.*

[When an old-timer comes around talking about the "king bee," and how wax is carried on the legs, and not secreted from the wax rings, or pockets, it is almost impossible for me, at least, to give him a respectful hearing, much less answer.—ED.]

am sure he will not want to try it. Even in the hands of many of the more experienced, many combs would break down, especially the heavy and newer ones. And, after all, Dr. Dzierzon clings to that bar hive of sixty-two years ago with great tenacity; and while he tolerates and uses the swinging or hanging frame in the supers for extracting, he has condemned it again and again for use in the brood-chamber. He holds that it is not conducive to the welfare of the bees, and especially detrimental during our long severe winters.

In a recent issue of the *A. B. J.* I notice this same idea expressed by C. E. Mead. He goes so far as to call the bee-space "the detestable bee-space."

Now, I want to object very seriously to such nomenclature. To say the least, it is next to an insult to Rev. Mr. Langstroth. I will not deny that the bee-space between and around the brood-frames is in a large measure to blame for our losing thousands of colonies of bees—at least, I had long been convinced of this when, a few years ago, I recommended (though timidly) in an agricultural paper a hive without frames for farmers and others who do not



want to handle them, or would not if they had them. I thought to myself, "What is the use of encumbering a hive with frames when they are not needed?" for they certainly are no advantage to the bees. I believe they worked havoc with many of my neighbors' bees.

When I first commenced keeping bees there was hardly a farmer here but had some bees; all styles of boxes were in vogue—soap-boxes, barrels, and nail-kegs included—and bees were kept rather successfully as to wintering, as well as to raising honey. Not so, however, after I sold them new-fangled hives and transferred the bees. One after another of the old bee-keepers dropped out of the ranks, the hives were worked up into kindling (very excellent kindling indeed, though high-priced). Now no bees are left to tell the story, and I am practically sole possessor of the field. When I think of this I feel guilty; but I certainly did the black deed in good faith. And, too, it may be all right as it is. There are bees enough, and the number of honey-producers is probably fully up to the requirements.

On the other hand, the bee-space has been a great help to the bee-industry. I will not take the time to enumerate the advantages, for every one is familiar with them. Where would bee-keeping be to-day had it not been for this bee-space? If we have paid for the lessons learned, I ask, ought we to expect to learn any thing of great value without paying for it?

And now, really, do we winter our bees so badly after all? Wintering in the movable-comb hive, including the detestable bee-spaces, is a science; but I believe we are beginning to understand that science. I believe we have learned to winter our bees even better and surer than the box-hive men of this and past ages. It seems to me that the greater protection we give, alone fully makes up for the disadvantages of the "bee-space." It may be that, sooner or later, a hive will be brought out having the advantages of both the box hive and the movable-comb hive so combined that it will captivate the bee-keepers and become universally adopted as "the hive;" but it is a long way to that time, I think. In the mean time, let us honor the bee-space; and, even should that time have come, we will still honor it for the good it has done. Father Langstroth be praised for it!

Naples, Ont. Co., N. Y.

[I know there is a good following who believe that the bee-space around the end-bars is decidedly detrimental to the bees during winter. They contend, also, that even during summer the brood will not extend out as near the end-bars with a bee-space clear around them as it will to the bars of the closed-end frame. Whether this is true or not, I am not able to say from observation. I only know that good results are secured with open-end frames. Some years ago (I think it was during the winter of 1881), when there was such a great mortality of bees throughout the country, it was said that bees in box hives fared rather better than those in the regular Langstroth. But in late years there seems to be no practical difference. Whether this is due to

the fact that modern bee-keepers protect their colonies having open-end frames or not, I can not say.

Believing that there is a demand for closed-end frames, we have for two years been selling the Danzenbaker hive. This, as is well known, has closed-end frames with a bee-space back of them; and this space is closed up by stops that make the space back of the frames practically a dead-air space; and I should think, friend Greiner, that such a hive and frame would just about fill the requirements of a certain class, especially farmers, who can not succeed with the modern open-end-frame style of hive.—ED.]

#### TALL VS. SQUARE SECTIONS.

Better Filling and Better Price for the Former;  
Paraffine Paper a "Delusion and a Snare."

BY B. F. ONDERDONK.

Glad I am you made the footnote to one of my articles on Danzy sections, page 519; viz., "It remains to be seen if these sections may not necessarily be sold at as low a price as the square ones," or words to that effect. The suggestion was timely, as I had been keeping records of each hive, number and styles of sections, with foundation supplied in all known forms, closely packed on top with quilts or paraffine paper, or bee-spaces.

The cleanest and best-filled sections are those under the enameled quilts; very little propolis is applied, and it is easily removed. The quilts will last many years. Paraffine paper I find a "delusion and a snare." Sections with bee-space are thickly varnished. By accident I find that varnished section-holders are entirely free of propolis between the bottoms of sections and the bottom-bars. I used up some old stuff, the refuse of alterations I made in my house, the lumber having been finished in hard oil. All exposed parts were clean, while a holder alongside was thickly daubed. I shall varnish holders and separators.

Now to answer your footnote. At the opening of the season, only a third of my sixteen colonies were provided with supers for Danzy sections. These were provided with 4-inch sheets and  $\frac{3}{8}$  bottom-starters. The latter I find necessary for well-filled sections. By the end of the white-clover harvest the D. sections predominated. I placed on the hives, during the entire season, 2000 sections—1000 D., 500 slotted, 7 to foot, and 500  $4\frac{1}{4}$  open all the way, bottom and top.

My product in D. sections, white clover,	321	
" " " " fall honey,	407	728
Extracted from " " less than 12 oz.,	81	
Drawn and partly so, D. sections,	125	
Not worked,	66	272
$4\frac{1}{4}$ sections, white clover,	218	
$4\frac{1}{4}$ sections, fall honey,	250	468
Extracted from $4\frac{1}{4}$ sections less than 12 oz.,	160	
Drawn, or partly so, $4\frac{1}{4}$ sections,	209	
Not worked, $4\frac{1}{4}$ sections,	163	532
Total,		2000

The light sections, between 12 and 14 oz.,



to be deducted from above full-price sections, are: Danzy sections, 75 at 12 cts.;  $4\frac{1}{4}$  sections, 232 at 10 cts. Nearly half of those produced were light on account of being slotted sections, with closed corners of course. My full sections of  $4\frac{1}{4}$  have sold at 13 cts. for white clover, and  $12\frac{1}{2}$  for fall, I furnishing cartons. My D. sections, glazed, white clover, 20 cts.; fall, 16 cts.; no cartons. Glass costs  $1\frac{1}{8}$  cts. each section. The  $4\frac{1}{4}$ , 7 to foot, weighed from 14 to  $15\frac{1}{2}$  oz.; the D., 15 to  $16\frac{1}{2}$  oz.

The record of my best colony, hived May 7 (a swarm from a colony which produced 82 sections last year), is as follows:

White clover, 24 sections, 7 to foot, slotted, weighing from $15\frac{1}{2}$ to 16 oz., extra well filled, but with a little hole in each lower corner, I hold at 15c,	\$ 3 60
White clover, 73 D., sold at 20,	14 60
Fall honey, 59 D., sold at 16,	9 44
	\$27 64

I draw the conclusion from these records, that, were I compelled to sell at the same price as the square, I should still be ahead. You see by the above that my total product is 1211 sections, with 80 lbs. extracted from unfinished sections.

I have found that a large swarm will produce better results in a ten-frame hive on eight frames, with full sheets of foundation, and dummies on each side, than any other way.

Mountain View, N. J., Dec. 1.

[This looks like heavy testimony in favor of the Danzy section; but, hold on! The honey in the tall sections was produced with the cleated separators (or fences), and that in the square ones in the plain solid separators. This would account in part for the better filling, and in part for the better price, but not entirely. It can hardly be questioned that the tall sections, apart from considerations just mentioned, bring a higher price, *other things* being equal, else why should such bee-men as Capt. Hetherington, Doolittle, Morton, Taylor, and hundreds of others, who *began* using them, keep right on with them? They would not do it to be odd, nor for the fun of it, surely. It must be because there is *more money in them*. Now, I am not saying that  $4 \times 5$  (Danzy), or that  $3\frac{7}{8} \times 5$  (Hetherington's), or  $3\frac{1}{2} \times 5\frac{3}{8}$  (Doolittle's), or  $3\frac{3}{4} \times 4\frac{3}{4}$  (Morton's), or  $3\frac{5}{8} \times 5$ , is just the size, but there seems to be *something* in a taller than broad section.—Ed.]

## THE PETTIT SYSTEM OF PRODUCING COMB HONEY.

### Perforated Dividers versus Slatted Dividers.

BY S. T. PETTIT.

*Ed. Gleanings*:—A number have expressed a desire to know how I succeeded the past season taking comb honey with my new system. I may say that, with me, the system had passed the experimental stage before giving it to the public; that is, I had for years tested it so fully that there was no reason for doubt about the advantages claimed for it; and the success of the past season was of the most gratifying

nature. The crop was large, the finish beautiful, even to the last surface outside all around. I regard the system as away ahead of any thing brought out yet. I have no monetary interest in recommending the system, but I should like those who try it to follow instructions. But believing it profitable to have the dividers offer as little obstruction as possible to the free and easy movements of the bees, and to know just how large holes the bees will respect and not bulge the combs nor build burr-combs in them, I used a large number this year with  $\frac{3}{8}$ -inch holes, each divider having 122 holes; and I am pleased to say that those with  $\frac{3}{8}$ -inch holes gave the most gratifying results every way; and, without a doubt in my mind, the crop was not only better but larger also than it would have been by the old way, because the bees work to better advantage when properly distributed. It stands to reason that they can do more when not crowded together in each other's way, and some waiting for a chance to work, when there is lots to do all around at the outside sections.

### THREE-EIGHTHS-INCH HOLES PREFERABLE TO SLATS.

I believe any one who has witnessed the wonderful process of comb-building, and then reflected upon how the bees proceed like a single individual, instead of separately, as the colony really is a congregation of thousands of individuals, will come to the conclusion that the fewer obstructions in the cluster the better.

I never witness this inspiring thing—comb-building—without being filled with wonder and admiration; the process moves so smoothly and harmoniously along that the little creatures seem under an inspiration. Now single out one bee and observe how it bites and pinches and builds the new comb. Now see another bee coming with a new white scale of wax in its pincers, touch the first one from behind, which moves right out of the way, and the other takes her place and puts the flake on the jagged edge of the new cell, pinches it fast, shapes, molds, and fashions it into wonderfully delicate and beautiful comb; and very soon another bee with another flake of wax comes along, and in turn takes the place, and so the process goes on over the different points of the new comb.

Well, this is what I am driving at: I can not help believing that the divider that offers the least obstruction possible to the free and easy movements of the bees is the one that will give the best results. If it be composed of pretty wide slats, and the bees have to crawl through narrow passages, their interests and energy will in no small degree be weakened; and in many cases the bees, instead of working cheerfully on, will set themselves at gnawing to enlarge the passages, or to daubing propolis or stain, and then you will have woe-begone sections enough. Now, Mr. Editor, may I suggest that it will not cost very much to set up a gang of bits and have the thing just right? I doubt if a  $\frac{3}{8}$ -inch hole will ever be improved upon; the bees walk right through them with no effort at all. They

don't seem to object at all to the dividers as I now make them. Please allow me to send you a sample.

I believe your fence is all right for separators, for there is work on both sides of them, but not so with the dividers. Surely there are not many bee-keepers who would stick at a cent or two per hive to have the very best. The bits must be in good order, so as to cut clean and smooth, and the divider sandpapered. It pays to remove every excuse for daubing propolis. Please your bees and they will please you. Study their wishes and they will gratify your wishes generally.

Belmont, Ont., Can., Dec. 15.

[You may be right in thinking that  $\frac{3}{8}$ -inch holes will be preferable to slats spaced  $\frac{1}{2}$  of an inch apart. But this coming season will determine whether the fences clear up to the outside row in the supers we are sending out will accomplish the results desired; namely, in having the outside faces of the outside rows as well built out as the faces of the inner rows. —Ed.]

#### CALIFORNIA THE LAND FOR THE SICK.

A Handy and Efficient Remedy for Croup; Health Regained; California's Resources.

BY J. M. HAMBAUGH.

Two years ago the 20th of last May I embarked with my family to this far-away sunny clime. The causes that prompted us to undertake so stupendous a change were many, chief among which was the breaking-down of my health, caused by a yearly recurrence of the grip, added to chronic catarrhal trouble of the head. This malady was quite fixed, having bothered me from my youth. My wife and oldest daughter were also troubled by the same disease. The climatic changes of Illinois seem to aggravate those troubles, and very few ever recover from the malady when it is once engrained into the system.

The trouble in our case was not only the suffering consequent from this and other disagreeable diseases, but the continuous and never-ceasing doctor's bills, making no small item of expense yearly. Life, as you are aware, without health, almost seems a burden; and now to sum up the benefits derived.

On our way down here from Pomona, a distance of 100 miles, we traveled in our surry; and from exposure our baby boy, Louis, took a severe cold, resulting in croup, which came near a serious termination, while at Capistrano, the first night out; and never in the history of my life did I spend such a night. Imagine being awakened from your slumbers near midnight, in a strange land, and among entire strangers, with that dread disease, croup, in its most hideous form, fastened upon your baby boy, and no remedies at hand to check this rapacious monster. We were by no means ignorant of remedies for this disease, having had years of experience with our older children, chief among which was the alum-and-honey remedy. In our lunch-basket was the desired honey, but no alum. The disease

seemed to be making rapid headway, and something had to be done, and that quickly. I ran down stairs, but no light could be found about the building. Everybody had retired. A faint light glimmered from across the street, which seemed to emanate from a store or business house. Hastily I ran across the street. The door was open, and I quickly entered, to find I had stepped into as hard a looking place as could well be found in California or Arizona. A bar was at the rear end, with decanters and fancy bottles, wine-glasses, tumblers, etc., promiscuously arranged. A trio of swarthy greasers was carelessly lounging about, and some obscene pictures hung boldly from the wall. The strong voluminous fumes of tobacco dealt heavily upon the sense of smell; but as my mission was imperative I made known my business in short order. There being no one behind the bar I inquired of a loungeer, "Are you the landlord?"

A gruff response came, "Other room!" pointing to an open door.

I hastily stepped in. Here the tobacco fumes were next to blinding. A round table occupied a central position in the room. About it was seated a husky-looking quartette of gentry, cards in hand and cigars in mouth, and noticeable were two piles of money at opposite angles on the table.

"Are you the proprietor?" I inquired of a party next to the door.

"I be," came as a gruff response.

"Excuse me," said I; "but I have a child across the way dangerously ill with croup, and am looking for a lump of alum. Have you any?"

"No alum about these diggins," came in a surly tone, and I beat a hasty retreat, believing that hell was not one hundred feet from those premises.

When I returned to my room, the child in its mother's arms was struggling for life in one of the spasmodic spells characteristic of croup. It seemed to us he could never recover, and would never see the light of another day. We remembered that, back in Illinois, our neighbor claimed that coal oil was a sure cure for croup. There was a lamp in our room, not in use, that had some oil in it. We decided to try it. We poured probably 30 drops into a teaspoon, and gave it. This caused nausea in a few moments, and in five minutes or less he vomited a large quantity of phlegm, to our delight, as we very well knew we had mastered the disease, and our precious boy was saved.

He rested sweetly the rest of the night.

Well, the following day we reached our point of destination, Escondido; but our baby was quite poorly, and we feared a return of croup; and as soon as we were comfortably situated I went to a doctor and procured medicine, which cost me \$1.50. The croup did not return, but the child lingered on the verge of lung fever for several days, which required close attention and care. He pulled through all right, and has not had one minute's sickness since, being over two years ago.

As regards my own health, I have been very much benefited, and the return of grip has



been very light. My wife and daughter have also been very much benefited, and, save the setting of a broken arm for my little boy Stephen, which cost me \$20, my doctors' bills have not exceeded \$5.00. There are a great many invalids here in this country, mostly from the Eastern States, who have come for the regaining of their health, and in many instances they make a rich harvest for the doctors. A few come too late, and are soon laid to rest beneath the soil upon the sunny slope of the great Pacific, while many, like myself, recuperate their wasted energies under the benign influence of the salt-water breeze. A large majority of our citizens have come from east of the Rocky Mountains. In this locality, Illinois and Nebraska seem to be the best represented. We not only have a delightful climate, but we have a country with a brilliant future, and it only needs development to make it cope with our more pretentious sister countries. Our natural resources of soil and water are here, and, with capital judiciously utilized, would make a veritable paradise. Fruits, both citrus and deciduous, grow to great perfection, and in quantities, in many instances, beyond belief. This is also a great grain-growing country, chief among which are wheat, barley, and oats, as the capacious storage warehouses of San Diego and Escondido at present bear testimony. There are also many localities that grow corn, though corn is not king, as in Iowa and Illinois.

Last, but by no means the least, are the wonderful resources of San Diego Co. as a honey-producing country. When I first came to California, in January, 1895, I had the pleasure of attending the 25th anniversary of the organization of the Chamber of Commerce of San Diego Co., and one of its organizers (name forgotten), in his speech, pictured very glowingly its birth and growth, and in a statistical review of the county's products that had been put upon the markets I remember that of honey was so fabulous that it was bewildering and beyond our comprehension; and the financial returns were more to the county than any other one product at that time.

Well, since my debut as a citizen I now begin to feel endowed with authority to speak, and will give you my first year's experience as a bee-keeper in the Golden State.

I bought 20 colonies of bees in February, 1897, and moved them a distance of nine miles. I had on hand ten colonies I bought the year before. I transferred them all out of their original hives into ten-frame Simplicity, and had most of the combs to cut out of the frames, and transfer into the regular standard Langstroth frames. This put them back fully two weeks, and my neighbor bee-keepers were having swarms and extracting quite a while before my bees were showing any signs of increase; but I never experienced such rapid growth in colonies; and with what rapidity they drew their full sheets of foundation, with which they were furnished, into comb! and then the fun commenced. One colony was robbed when first transferred, and I had to requeen three others, making 29 colonies in working

trim the commencement of the season. I was not prepared with sufficient surplus arrangements to keep down swarming by increase of storage capacity, and I had to let them increase largely by natural swarming. For three weeks I was so busy I hardly found time to eat. I increased my stocks to 52 colonies, and many of the hives had two and three swarms. I just put on surplus arrangements to suit, and returned a great many second swarms to the parent colony. As to honey, I secured 46 cases of 120 lbs. each, making 5520 lbs., being nearly 190 lbs. per colony, spring count, and 100 lbs. of beeswax. This is official, and is not bad for a tenderfoot novice. This is by no means startling to the resident Californian; and were I to tell you of the wonderful yields of honey as told to me by reputable citizens you would class me among the chronic California prevaricators.

Escondido, Cal., Oct. 16.

### THE WASP'S NEST IN THE HIVE.

BY B. F. BARR.

I send you a picture of a wasp's nest that was built in a Simplicity hive on the first sections above the brood-nest, last June. I was very much surprised when I saw it. The corners of my hives all have a piece of tin nailed around them to keep them from springing open, and the covers also; and I make all



the brood-frames fit tight. There was no place that I could see where the wasp got in, except at the entrance. I don't like top ventilation. I never saw a wasp around my hives when I had bees in them. The bees daubed it all over with propolis. You can see where the propolis is dropping out of the end of it. It was filled full.

Flagler, Ia., Dec. 20.

[This is indeed quite a curiosity. I have seen wasps flying around the entrances of hives, but I have never seen one that was slick enough to glide in without getting caught. I

can readily imagine how a wasp might dodge in; but how one could actually build a nest on a comb of honey is not so easy to explain, unless, perchance, this section of honey at which we are looking had been partly built out from the previous season. If it had been put on to the hive a little earlier, before the bees began in the super, a wasp might, after getting through the entrance, be able to make a nest for itself in a comparatively empty super. But it seems the bees must have "put on the finishing touches," from the fact that they smeared it all over with propolis, and plugged the hole up with the same substance, and the wasp was evidently interrupted in its work. I pity it.—Ed.]



#### HOW MUCH HONEY IS CONSUMED IN LOS ANGELES?

This is a rather hard question to answer. It is said that more honey is consumed in cold than in warm climates. Los Angeles is in the semi-tropic belt, and should consume but a small amount of honey; but as it is the center of or shipping point for a large amount of honey, many pounds must drop in here for home consumption. From observation of the amounts sold in stores and by peddlers we risk the estimate at ten carloads of 20,000 lbs. per car, or 200,000 lbs. This would give a consumption of only 2 lbs. per capita in this city of 100,000 population. To raise the per capita of consumption to 20 lbs. is an interesting problem to solve, and who will solve it?

Two bee-keepers from our lower country have been doing excellent pioneer work in our extreme Northwestern States.

The new Weed process of selling honey is another move in the right direction. Now that we have gotten the production down to such a science, we should scientificize the disposal of it. We should also remember that there is not enough honey produced in the United States to go around if properly distributed.

From the low lands and *cienagas* (swamps) along the Sacramento and San Joaquin Rivers, where the tule grows in luxuriance, there is much honey produced, and of a very dark color. This honey is worth but 1¾ cts. per pound, so quotes the San Francisco papers. It is safe to say that there is not much produced at that price.

The alcohol test is a very simple one for detecting the presence of glucose in honey. Glucose seems to have an affinity for alcohol; and when a small amount of the latter is poured over the surface of the mixture the glucose will send up little threads and balloon-like bubbles into the alcohol. Alcohol placed upon the surface of pure honey creates no agitation whatever.

There are colonies of bees within the city limits of Los Angeles, in spite of corporation law; but the most of these colonies are in houses where they are not wanted. There has been an estimate given that there are a thousand colonies so domiciled. From our point of view, the estimate is far too large. After a residence of nearly two years in this city, and after no little observation, we don't believe there are over one hundred such colonies.

Mr. W. D. French, of San Diego, went to Oregon with a car of honey, and after a few weeks of work disposed of it at a fair price. Mr. J. C. Kubias is performing the same trick in Montana. Mr. K. is evidently doing well, for over a car of honey has been shipped to him. As an evidence of prosperity, he recently returned with a dog that weighed 180 lbs. A few more enterprising and get-there salesmen would revolutionize the honey market.

In the Chamber of Commerce, in this city, are several jars of pure extracted sage honey. Some of these jars have been on the shelves for over two years, and the honey is as clear as when placed on exhibition. Pure sage honey will remain liquid a long time. Some producers go so far as to claim that it will never granulate. And, by the way, the said Chamber has gotten out a new pamphlet for free distribution, describing the various beautiful features of Southern California.

A book has been written by a Los Angeles woman, in which she asserts that the human race has full power and dominion over the animal kingdom. "All insects," she says, "will go from your body, your house, and your farm, if you bid them go, and do it in love. They are intelligent, and respond to the spoken word *logo*." Well, now, we'd like to see her try that on a colony of Cyprian bees. She might start in with the love-racket all so gay, but in the end the Cyprians would hold the farm. Come to take a second thought, 'there air some wimmin folks' that have been known to talk every thing off the farm but themselves. We think the bees will stay, sort o' peppery, like the woman.

Tom Wee Ling is a progressive Chinaman. He is the only bee-keeping Chinaman we know of. The majority of his countrymen take to the laundry business or to gardening. But Tom has a ranch in the Soledad Canyon, and, seeing his neighbor, Mr. C. H. Clayton, taking off tons of honey, his fever in the same direction was excited, and the result is an apiary and several tons of honey. Tom Wee Ling is, furthermore, so progressive that he has become a member of the Exchange, freighting his honey over forty miles by team, and putting it into the Exchange. When he put his honey in the warehouse he said, "Me sell my honey all samee like Mellican man." [If you will send us a picture of Tom Wee Ling we will half-tone it for GLEANINGS.—Ed.]

Those bee-men who have been trying to get the government to import *Apis dorsata* should take courage, for the Secretary of Agriculture has given his assent and approval for the importation of *Blastophaga psenes*, or, in a short-



er term, wasps. To grow Smyrna figs to the greatest perfection needs also the Smyrna wasp. Pollen from the wild (or Capri) fig must be carried to the cultivated fig, and *blastophaga* is the insect to do the work, even if it costs the government several thousand dollars to import it. There is this difference, however, in the opinion of bee-men and the fruit-grower. The latter are unanimous in the necessity for the importation of the wasp, while bee-men are divided in their opinions in relation to the usefulness of *Apis dorsata*, even if imported.

In our conversation with bee-keepers we constantly find the idea advanced that a square frame or a cubical hive is the best for the best welfare of the colony. We have the old argument over again that bees must cluster into a spherical ball. It is on the same plan in which a cat or a dog or a rattlesnake, or even a man, sort-o' curls up into a ball more or less in cold weather. It is all according to nature—a very good argument, perhaps, for a cold climate. Father Langstroth, whose judgment is not to be questioned, after due study and experiment adopted an oblong brood-chamber. He even went further, and advocated a very shallow hive in later days. Langstroth's good judgment is verified by the fact that bees winter well, even in cold climates, in wonderfully cramped places; but what earthly use is there for applying that ball theory, and adapting hives to it in this favored land where bees fly every day in the year, and where bees in the wild state winter successfully in some of the most cramped and crooked places that can be imagined? Let's give the ball theory a rest, especially in semi-tropic countries.

It is really amusing to see how those fellows flounder around the statement made by J. F. McIntyre, at the national convention. He said, "Bees store less honey for a few days after extracting" (cleaning and repairing that great amount of comb, you know). Now, not one of the writers seems to know, or else willfully ignores the fact that there is a hive that overcomes that objection. Just step out to my shallow-frame Heddon-hive apiary. Three supers are on. We go over the apiary and extract one full super; a super with empty combs takes its place; and the bees, having two other supers partly full, do not miss the 25 pounds we have taken, and keep right along at work just as though nothing had happened. Then some—yes, nearly all of them—write and write about hives great or small—eight, ten, twelve, or more frames, and all the pros and cons. Now, we have in the above hive the happy combination of both great and small—one, two, five, ten cubic feet of space, or even more. What more does anybody want, we should like to know?

Our eastern brethren who have complained just a little in the past about California honey flooding the eastern market have us poor Californians under their thumb this year; and especially is this the situation respecting comb honey. A good honey yield in the East means a large amount of comb honey. Extracted honey is not so generally produced in the East

as it is in California; consequently California comb honey must go begging for a market or be sold very low in competition with the eastern product. Owing to our excessive freight rates we are hardly in position to compete in a location where low rates already prevail. A large amount of comb honey is still in the hands of the producers in this State, with not much prospect of a movement unless the bee-keeper will sacrifice his honey at the ruling price of six cents per pound. Extracted honey has moved more freely, but we can not boast of a very lively demand for that. The great tide of prosperity has so far left the honey industry out in the cold.

Ants are something of a nuisance in this hot climate, and there are not a few instances where they have driven bees from their hives. Several plans have been devised to protect the hive from their depredations, but these devices are generally too expensive for general introduction. A genius residing in Newhall, Cal. (Mr. Tilton), observing that ants will not crawl over a chalk-mark, went a little further, and has invented something entirely new. A cast-iron standard about two inches in height is surmounted by a neatly turred disk of chalk. Place four of these under a hive, and the bees can work happily, and the black and rapacious neighbors of the ant-hill can not molest them. Bee-keepers who use the bee-escape find that, just as soon as the bees get out, the ants get in. Every apiary in our wild lands is surrounded with numerous ant-hills, and a force of bees must be kept constantly busy repelling the intruders. The chalk device gives this force liberty to hie away to the fields. Perhaps it will pay to use the chalk ant-excluder.

Apologizing for a plethora of honey in trade centers, shouldn't measures be taken for a more general distribution of it? Proper distribution and the prevention of adulteration are both necessary for the welfare of our industry. The new U. S. Union proposes many things in this line; but after a year of existence its doings have caused scarcely a ripple in freedom. There are parties who wish to marry the new Union to the old National Union. That may be right and proper; but wouldn't the new Union be a rather weak bride? We would suggest that the new Union make a record as glorious as that of the old Union; then the marriage ceremony might meet with the approval of the relatives on both sides. Let us have a little prevention of adulteration of honey right off. Aggressive work will give heart to the organization, which it evidently lacks at present. Come to think the matter over, perhaps a few dollars would give the organization as much life as any thing; so, here goes a dollar. We hope bee-men will follow our example. [The new Union is not much behind the old in strength; and if it keeps up its present record it will soon be ahead. It is too early for it to get in work yet.—ED.]

There are traces of blueness beginning to appear upon the faces of bee-keepers on this coast. This marked characteristic begins to appear at the corners of the mouth. If there

is but little sale for honey, and at a low figure, the tendency of the corner of the mouth is to drop. This indication is very strong on the faces of bee-keepers just now. The mouth-corner drop, as we may term it, is intensified by continued dry weather—only two inches of rain, and now it is the first of January. In addition to the drop, a sad look takes possession of the eye. No rain means no honey and no money. Some of the most sad are predicting another no-crop season. There are still some hopes of a generous honey crop, even though we do not get the rains until February or March. Our hopes will be strong until that date. We wish to say, however, that parties who contemplate coming to this State had better wait until they hear that we have had several inches of rain.

#### PERSECUTED.

A bee-keeper in Redlands, Cal., has for several years been located at the entrance of a small canyon near Redlands Junction. The apiary is upon land he has taken up under government claim. Below the canyon and apiary is a wide stretch of land suitable for the cultivation of the orange, and many orange-groves and residences are there located. A reservoir for irrigation purposes is located not far from the apiary, and has done service for all concerned for years, and no complaints made about the bees getting into and fouling the water, or of disturbing the peace of the residents. Recently a millionaire (so reputed) has purchased a residence and an orange-grove near this apiary, and straightway there is trouble about the bees. It has just been discovered that they are a nuisance in many ways. They sting the men at work in the orchard; they foul the reservoir; gather in multitudes at the watering-trough, and sting horses. Millionaire has commenced suit against the bee-keeper; demands a removal of the bees, and, in addition to this, he wants \$1000 damages. The bee-keeper is a man of peace, and has done every thing in his power to pacify his wealthy neighbor. He has even agreed to move his bees back an eighth of a mile into the canyon; but millionaire says, "No, sir, you just get out, I own this whole country." This would be an excellent case for the Union to try, but, unfortunately, the bee-keeper is not a member. We shall keep watch of this case, and hope the bee-keeper will win the suit. The case, however, should admonish every bee-keeper to become a member of the Union.

A GREAT amount of correspondence has come in within the last month regarding the fence (cleated separator) and the plain section (no-bee-way)—so much, in fact, that it is simply voluminous. We have been almost buried up with correspondence, and it has been almost impossible for me, at least, to give prompt replies. I beg of my friends to make their letters as brief as possible, and forbear if I do not answer at once. I hope to be caught up in a few days.



#### CAUSE OF SOUR HONEY.

*Question.*—What is the cause of uncapped cells of honey souring and running out of the cells? When I took the sections off the hive I spread them on the floor in a low room next a roof, which had one low window toward the west, and a door opposite the window, which opened into another room. I thought I had a nice room in which to keep my honey, but it did not keep. Was the trouble with the room or with the honey? What can be done with the sections to make them salable?

*Answer.*—In the first place, sections having many unsealed cells can not be called "salable" as compared with nicely capped honey of the same quality or kind, and such unsealed honey should have been allowed to stay on the hive till all of the cells were sealed, except perhaps a few bordering on the wood around the outside of the section. When thus capped, honey is not as liable to sour as is that which is unsealed. Thus it will be seen that a part of the trouble came from taking the honey from the hive before it was ready, or "ripe." Then there might have been some trouble with the honey, for I have noticed that certain kinds of honey, like apple-blossom and candelson honey, will not ripen up in the same room in which clover and basswood honey will grow better all the time. Then in certain seasons the bees will seal up honey very much more unripe and thin than they do in other seasons; and the more unripe honey is, when capped over, the more liable it is to deteriorate in a room in which thoroughly ripe honey would keep in comparatively perfect condition for some length of time. But all honey will usually ferment, become sour, and eventually run out of the cells, if kept in a damp cool room like a cellar. Any room, or article in such room, will draw or take on moisture rapidly if allowed to become much colder than the surrounding air at any time, and this room might have been colder than the surrounding rooms, hence attracted moisture to it. If the room had been well ventilated it would have helped much; and had it been thus, coupled with the suitable warmth, I can not see what hindered the honey from evaporating all right. I have found that a high temperature in a room is of very little service if said room is so tight and close that no draft of air can carry off the moisture. Consequently honey should not only be kept in a dry warm room, but there should be enough ventilation in and about said room to carry off all moisture which evaporates from the honey; and the larger the pile of honey stored in the room the greater should be the draft or ventilation. If you had such a warm, dry, well-ventilated room to store your soured honey in, it would in all probability thicken the honey again, but would hardly make it salable; for honey



which has once soured will never become fit to put on the market, unless one cares nothing for his reputation or for the good of the market for other bee-keepers. I have returned such honey to the bees, and let them try their hand at making it marketable again; and while they will dry and clean it up, even if they have to remove the whole from the cells and redeposit it again, still it is an unpleasant job all the way around, and at best the honey never looks as nice as it did when first removed, and in taste it can not be called good honey any more. The best thing that can be done with it is either to extract the honey and keep it for feeding purposes, after scalding it, or cooking until sufficiently thickened, allowing the bees to clean out the combs, or feed the honey to strong colonies right from the combs, when in either case the combs will do for "bait" sections the next season, after being leveled down with the comb-leveler or an uncapping-knife.

But I see I have failed to notice one very important point in this matter. You say that, when you took the sections from the hive, you "*spread them on the floor*," italics mine, for I wish to emphasize those words, so that no one will ever place nice section honey directly on the floor of any room. When I first commenced keeping bees I used a room quite similar to that described by the questioner, and did just as he did in putting the sections on the floor. When I came to crating that honey I found that those next the wall of the room and the floor had soured, and the honey was bursting from the cells, while that higher up in the room, and out from the wall, had not grown thin or watery at all. I took the hint at once, and the very next year found me with a temporary platform fixed of slats, the same spread apart enough so that the edges of the sections would just catch on them, said platform being raised up a foot from the floor. When another tier of sections was to go on top, strips were placed between, and so on clear to the top of the pile, and in this way there was no hindrance to the air from circulating all through the sections, above and below and between.

All these are little matters; but the whole of these little matters, applicable to every phase or part of bee-keeping life, when put together to make one great whole, make all of the difference between success or failure in our beloved pursuit, according as we understand and use them; and the finding of these little matters in print, in our different bee-papers, is the very thing which keeps our tender feet from being lacerated and torn by blundering on the snags which we should otherwise find in the way.

A plainly dressed woman was noticed to be picking up something in one of the poor slum streets of one of our cities where ragged barefooted little children were accustomed to play. The policeman on the beat noticed the woman's action, and watched her very carefully. Several times he saw her stoop and pick up something and apparently hide it in her apron. Finally he went up to her, and, with a gruff voice and threatening manner, demanded,

"What are you carrying off in your apron?" The timid woman did not answer at first, whereupon the policeman, thinking she must have found something valuable, threatened her with arrest if she did not show him what she had in her apron. The woman opened her apron and revealed to the astonished policeman a handful of broken glass. "What do you want with that stuff?" asked the policeman. The woman replied, "I just thought I'd like to take it out of the way of the children's feet."

The dear soul was doing what she could to save those children trouble. And shall we not imitate her example, each and every one of us, by doing all we can by way of telling others how they may avoid the mistakes we have fallen into? How much better and "sweeter" the bee-keeping world would be if each of us would be careful to save the "bare feet" of the "young and the weak" in the way!



#### HIVINGS WARMS WITH CLIPPED QUEENS,

In the bee publications I have read regarding the hiving of swarms with clipped queens, the instructions are to find and cage the queen; remove the parent colony, and place a hive with empty combs or foundation on the old stand, and allow the queen to run in with the returning bees. Now, Mr. Editor, I should like to know if you have ever tried the following, which has worked like a charm with us this summer. Have your empty hive ready on a new stand. When the swarm issues, cage your queen in the usual way, and tie the cage on the end of a 12-ft. pole and elevate where the bees are flying thickest, when they will cluster around the cage and pole, and you can then carry them to your new hive, and dump them down in front, releasing the queen as the bees run in. This seems to me to carry out nature's intentions better than the other method, as you give the swarm what they issued for—a new home and a new location; besides, in the moving method all the field-bees on returning go in with the swarm, when, according to Nature's way, they should remain with the young bees in the parent hive.

J. M. MITCHELL.

Indooroopil'y, Queensland, Aus., Nov. 16.

[Yes, I have practiced your plan a good many times; but it is very much inferior to the other way—the one described in our catalog, and the one that is used by the great majority of practical bee-keepers. By the plan mentioned above, it is necessary to hold the pole (perhaps at arms' length), and wait till the bees cluster on it. On the other hand, by putting the queen at the entrance of the hive, to receive the swarm, the bees will go to the hive automatically, and relieve the apiarist of the necessity of any further work.—ED.]

## THE FENCE AND PLAIN SECTION IN ONTARIO.

As promised in my last I attended the Ontario B. K. Association at Hamilton, and took the new fence separator and no-bee-way sections for exhibition and criticism, in order to find out the good and bad points, if any. The attendance was, of course, larger than at our local association meeting; and, as a result, a greater diversity of opinion occurred regarding them. No valid objections, however, were presented, nor any thing new, except what I have already given you. Some thought a section 1½ inches all round would hold too nearly a pound for their market, and thought it impossible to satisfy all as to the exact size each should use. Quite a number, nevertheless, concluded to give the new combination a trial the coming season. F. A. GEMMILL.

Stratford, Ont., Dec. 13.

## DRAWN FOUNDATION, SECTIONS, AND FENCE.

The drawn foundation you sent me the past season was put into sections just at the close of our main honey-flow. The super was filled out with sections with starters. The deep-cell foundation was filled and completed, while those with starters were scarcely touched; but you could very readily detect toughness in the eating thereof.

I am much pleased with the new fence separator, having tested a few the past season. I believe the fence and new-style section are what bee-keepers are wanting, to avoid so many partly filled vessels in storing and shipping.

W. J. COPELAND.

Fetzerton, Tenn., Dec. 7.

## A HONEY SOCIABLE.

As we had some 4000 or 4500 lbs. of honey, and each section had to be cleaned before marketing, as is the custom with all bee-keepers (I guess) we thought we would ask the ladies of the Christian Church, who meet around one day in each week, in the capacity of a sociable or "aid society," at sewing, quilting, or other similar work. They thus promote sociability, and raise something to help pay their pastor's salary, and help those who need help. They signified a willingness to come, and come they did, some twenty of them, and a sweet time we did have. Some was here by 9 o'clock, and they worked well with hand and tongue. Of course, we needed to oversee the work and get them started right. Considering every thing, they did the work well, and cleaned about 1500 lbs. that day. I got dinner for them, and paid the society \$2.00 besides. They did not ask any thing but their dinner, as each one works all she has a mind to, and pays her 10 cts. to the society, so they were well pleased with their day's work. They paid about \$4.00, and we all had a very pleasant time, and closed with prayer.

Each one wore a calico dress and apron, and brought a sharp pocket-knife. Some little honey was injured, but not any more than when I hire a woman to do the work; and so much of it was done all in one day that I thought I should have to have them another year, as they requested.

For such a gathering, every thing should be in readiness before they come, so that the owner of the honey can have a little leisure to keep watch and see that the work is done right—not only to be started right, but see to it clear to the close, that it is not slighted or injured. Unless we do that work our own selves, it is hard to get honey prepared for market without being defaced in some way. The honey should be set in piles in the center of warm rooms, so the workers can sit around the pile; and when sections are cleaned we pile them up on division-boards in piles back against the wall, and carry them away. I like them set the same way up they come out of the super, not turned on to their side. Each one had a board to lay on her lap, to catch the wax and shavings. A division-board we use in the hive with a cleat clear around it makes a good board to use. MRS. L. C. AXTELL.

Roseville, Ill., Dec. 13.



A. L. C., Mich.—We do not think it would be practicable to do without separators in the case of plain sections. Separators could be dispensed with in connection with the old-style two-bee-way sections, but not with the no-bee-way, because if there is a slight bulging it would be impossible to case the honey.

P. D., Kan.—The circular you send is about the same old thing that used to be issued some twenty years ago by one Lizzie E. Cotton. There is nothing new or modern about it. It is not based on convenience, and certainly no practical bee-keeper of to-day would think of adopting it. Some twenty years ago Mrs. Cotton used to sell the book and recipes for \$20.00; but now a relative of hers has come down a peg—\$4.00.

F. B., Quebec.—The object of having the end cleats in our fences longer than the middle cleats, was for the purpose of support, for the fence is supported on these cleats as they drop down between the section-holder bottoms, and are supported on the tin strips. Our issue for Jan. 1st, Trade Notes department, will, I think, make this plain to you. The object of dropping the middle cleats down a bee-space on the top slat is to discourage the bees from making holes in the corners of the sections. When these cleats drop down a bee-space, the chance of having the honey filled clear out to the corners of the sections is very much greater.

F. E. K., Minn.—I do not really know how you can avoid dampness in your cellar unless you go to the expense of putting in a good drain to take away surplus water. But experience has shown that dampness is not necessarily an obstacle to successful wintering. The



main thing is to be able to control the temperature—that is, not let it go up too high nor down too low. It should usually not go above 50 nor below 40—45 being the nice golden mean. If your bees are quiet, no doubt they are doing as well as could be expected. The temperature of the cellar may be lower if the covers are on the hives as well as the bottoms, ventilation being secured only through the entrances. In cases where the temperature is liable to be up to 50° or above, it is well to have the bottom-boards removed entirely.

*J. B., Mich.*—I should really enjoy telling you how to make photos, and all the details therewith connected; but I have all I can do, and more too, to answer questions about bees; and if I were to essay to act as instructor in amateur photography I should be swamped, so I must most respectfully decline. There are most excellent text-books on the subject. But unless you have a little spending-money you had better let the fascinating art alone, for it costs, and there is little or nothing in the way of financial returns. But it pays me, or us, rather, because I use my best pictures for our journal, and intend at all times to keep posted in regard to the latest developments in photography and half-tone engraving, for that is a part of my business, but it is a little bit out of my line to explain the art, when there are so many good books for that purpose. Apply to E. & H. T. Anthony & Co., New York, or the Eastman Co., Rochester, N. Y.

*J. A. U., Neb.*—The arrangement that you speak of, of deep supers containing two and three rows of sections in a wide frame or section-holder, is something that was used years ago, but which has been almost entirely abandoned. The great objection to such deep supers is that the several horizontal tiers of sections can not be reversed or alternated. Then, moreover, the bees will go into deep supers much more slowly than into shallow ones. These latter permit of getting only one tier of sections at a time, or as much as the bees can keep warm. As soon as the first tier is pretty well along it is raised up, and another super containing sections with foundation is placed under it, and so on room is added as fast as the bees can use it to advantage. By the plan that you propose—of three tiers, one on top of the other—it will be necessary to give the bees three times as much room as they require, at the start; and before they can build comb they must warm up somehow that great barn of a space. It is more practicable to heat up a small space than a large one, and that is the reason why a shallow super is preferable.

*W. H. E., Kan.*—We think you would be making a serious mistake if you adopted the plain section  $1\frac{1}{2} \times 3\frac{3}{4} \times 5$ . While, no doubt, it would hold a pound, or even more, the comb would be so thick it would be poorly filled out. You can get far better results by using the  $4 \times 5 \times 1\frac{1}{2}$ , for then the comb is about as the bees make it in ordinary brood-rearing. Such combs, you will find, will be flat, like a marble slab; will be sealed quicker, and the honey will be ripened better.

But the great majority of people prefer the

scant pound section, and for such our Ideal  $1\frac{1}{2} \times 3\frac{3}{4} \times 5$  does very nicely. You will need to consider this point very carefully. A box  $1\frac{1}{2} \times 4 \times 5$  would hold about  $1\frac{1}{2}$  lbs., especially if you intend to use it with a fence. A plain section  $4 \times 5 \times 1\frac{1}{2}$  holds just as near a pound as it is possible to get it, on an average. If you could be at our establishment for a short time we could show you some very pretty combs on this order. If you are going to make a special hive, you had better have one adapted to take the  $4 \times 5$  pound section  $1\frac{1}{2}$  in. wide. This, as I said, holds a full pound—that is to say, some sections will run slightly under and some slightly over. We shall be glad to advise you further. In the mean time I am rather of the opinion that the new Danz. hive, super and all complete, would be just the thing you are looking for. We send you Mr. Danzenbaker's book, and should be glad to have you peruse its pages carefully.

*A. H. N., N. Y.*—Knowing your locality, or the one you propose to commence bee-keeping in again, I think I would advise you to use the staple-spaced frame as was illustrated in our Nov. 15th issue, page 817. I base this recommendation on the supposition that you have a great deal more propolis than we have here in Ohio, and I know that this particular frame is giving much satisfaction in the vicinity of Gallupville, N. Y., and, in fact, all through Albany Co. As to whether you had better adopt a ten or eight frame size of hive is hard to say. If you intend to produce extracted honey largely, then I would unhesitatingly recommend the ten-frame; and even if you intend to produce comb honey principally, it is very possible you would like that size better. As to the comb-honey super, I think the tall section with fence, especially for the Albany and New York markets, would be the best. Our Ideal super that we illustrated Jan. 1st showed the comb-honey combination that I would recommend.

This reminds me that you might possibly prefer this super for a brood-chamber—that is, I mean the super shell itself. It would permit you to use frames  $5\frac{3}{4}$  in. deep; and two of these supers would give you about eleven frames capacity to the hive. It is a little hard to say at this time whether the double-chamber hive will become popular in the future or not. I only know that it has some strong advocates as well as some who, having tried it, would not use it. I think, all things considered, however, that the ten-frame will suit you better than any thing else you can select. Then you can, if you desire, contract your brood-nest down to eight; but you can not very well make a ten out of an eight size.

If you were in Michigan or Illinois, I would by all means recommend the eight-frame size. If you were to go to Florida or Cuba, or some of those countries where honey comes almost continuously, I would recommend a twelve-frame size. Even in our own locality I was very much pleased with what some of our twelve-frame colonies did for us last summer, even when pushed for comb honey; but on account of their being so unwieldy I should prefer for Ohio the eight size.



A FEW weeks ago a photo came from W. A. Selser. As it represented an idea in advertising, I have had it reproduced in half-tone, and the same appears in another column. Mr. Selser failed to send us any word of explanation, and I do not know that any is needed. This sign is made up of a two-story Root chaff hive, put up on stilts, perhaps on a vacant lot, facing a street-car line. The bee-hive, the sign, and the index finger are all suggestive as to where honey can be bought. The idea is not bad.

IN another column our friend J. M. Ham-baugh tells of their experience with that dread disease the croup that attacked their four-year old. To-day a letter has come to hand containing the sad news that this dear little one died on the 24th of December, and that the dread disease pneumonia did the work. I am sorry, also, to record that our friend and brother, Mr. P. H. Elwood, lost, the day after Thanksgiving, the light of their household, a bright little boy of three years. GLEANINGS extends its sincerest sympathy to the grief-stricken parents.

If we knew the baby fingers,  
Pressec against the window-pane,  
Would be cold and stiff to-morrow—  
Never trouble us again—  
Would the bright eyes of our darling  
Catch the frown upon our brow?—  
Would the prints of rosy fingers  
Vex us then as they do now?

#### CREATING AN APPETITE FOR HONEY—HOW TO DO IT.

ON p. 854 I referred to the fact that one of our government officials had gotten hold of our honey-leaflet, and how he introduced it to the general public through one of the great dailies. Again he writes as follows:

U. S. DEPARTMENT OF AGRICULTURE,  
Weather Bureau, Columbus, O., Dec. 10.

Gentlemen:—I have just received your Dec. 1st number of GLEANINGS, and read with much interest your article on "Casting Bread upon the Waters." As an ex-newspaper man I must confess you have perceived what so many others fail to appreciate—the value, in advertising, of at first creating a desire. That principle applies to all advertising; and where it is properly brought about the rest is easy so far as letting people know *where* such and such a product or article is for sale. Nothing like arousing curiosity or desire—it's the very vitals of economic and successful advertising. I am pleased to have been of at least a little service to you and your interests.

Speaking *personally* of the effect of reading your "leaflet on honey," will say that, while I well knew honey was "a good thing," I had no idea of its variety of uses, nor did I appreciate fully its value as a food product. I really *learned* something *new*, and I immediately began to feel a yearning sensation that could only be satisfied with honey, and nothing but honey. These are facts, and, if true of myself, the application fits others.

H. W. RICHARDSON.

Section Director.

Our readers will not fail to "catch on" to our scheme of advertising honey which Mr. Richardson so readily appreciates; and then, bearing in mind his last paragraph, it will be

seen it is to the interest of every bee-keeper in the land, who desires to sell his honey, to take every means possible to have this leaflet distributed. Why, don't you see it accomplished with Mr. Richardson *just exactly* what we desired it to do with every consumer; namely, stimulate a "yearning sensation" for the most wholesome and the best sweet in the world?

#### THAT IRREPRESSIBLE DANZENBAKER, AND SOME OF HIS IDEAS.

WE have had another visit from our irrepressible, wideawake, progressive Danzenbaker. Although he is on the shady side of life, when one would naturally expect him to be conservative, he is one of the most progressive bee-keepers I have ever met. He says (but I as good as told him I did not believe it) that he tried to get me to see the advantage of the plain section and double-cleated slatted separator two years ago. However that may have been, it was not very hard to get him to adopt them this fall when I began to talk about their advantages.

I believe in giving credit where credit is due, and I will say that Mr. Danzenbaker was the first one to show us the advantage of the dovetailed or lock corner; improved construction in hive-covers; improved construction in bottom-boards; the D. case—this letter D. simply representing Danzenbaker; improved method of crating hives; and last, but not least, directly and indirectly the advantages of fences and plain sections.

One of the ideas that Mr. Danzenbaker has been trying to pound into my head is that the combs of our ordinary  $4\frac{1}{4}$  sections are too thick; that when they are thinner the bees will build them out better, and cap them over more evenly; and that, moreover, the combs will be better attached to the wood. He argues that a comb for section honey-boxes should be no thicker, or scarcely any thicker, than that ordinarily used for brood-rearing. I am not quite prepared myself to admit this, yet I do not say that he is wrong.

Friend D. also believes that the closed-end frame is the coming brood-frame. I do not. While I am satisfied they offer more favorable conditions for winter, they are not as convenient to handle, according to my notion, as some form of self-spacing open-end frame. To my mind, convenience is more important than a probable slight advantage in wintering.

#### SCATTERING THE TRUTH IN THE HONEY-LEAFLET; SOME OF THE ALLEGED TACTICS OF THE GLUCOSE PEOPLE.

DR. MILLER's honey-leaflet is still finding its way into the great daily papers. The last time, it appeared in the Washington *Star*, at the solicitation of our friend Danzenbaker. Mr. D. managed to scrape up an acquaintance with the city editor, and then interested him in bees by presenting him some of his beautiful Danzy sections. The result was, a good big portion of the leaflet was published in the *Star*; and although neither Mr. Danzenbaker nor any other bee-keeper was there mentioned, a demand sprang up at once, in the



national capital, for some nice honey, and people came to Mr. Danzenbaker by the dozens, asking him if he had seen that article in the *Star*, little dreaming that he was responsible for its publication.

I propose to mention every daily that will print portions of the honey-leaflet. First, I wish to encourage them in their good work; and, second, I wish to show to bee-keepers that, if we keep on in this way, we may be able to double the demand for honey. Although I have said it several times, I will say it again, I hope bee-keepers will get their local publishers to print at least a part of the leaflet.

Mr. Danzenbaker told me recently that some of the glucose-venders are interested in getting the ears of publishers so as to induce them to say things detrimental to pure honey and maple syrups, in order to create a demand for other (glucosed) syrups. One item he lays at their door is the statement that ordinary honey is not fit to eat, because, forsooth, the bees visit pig-styes and cess-pools, and therefore ordinary honey is contaminated, and not fit to eat. I have seen such items going the rounds of the press, and wondered why they should keep bobbing up every once in a while. Mr. Danzenbaker insists it is because the glucose people not only urge it upon the city editors, but buy them off if they can not get them to publish the stuff otherwise. I can hardly believe they will stoop to such methods; but whether they do or not, let us keep at the city editors till the facts about good honey are scattered all over the United States and Canada. Perhaps you may think I am harping on this matter too much; but I am firmly convinced that we may very greatly increase the consumption of honey if we can only get the proper kind of truth afloat. I do not know but it would be a good idea to offer prizes for the best articles suitable for the daily press, briefly written, and entertainingly setting forth the value of honey as a food. Perhaps such a course will be advisable after Dr. Miller's leaflet has become pretty well copied in the papers.

#### THE NATIONAL BEE-KEEPERS' UNION; A GOOD SHOWING.

THE thirteenth annual report of the National Bee-keepers' Union is just at hand. The General Manager announces that appeals for assistance for the past year have been the largest in the history of the Union. The majority of cases seem to have been in the line of defense, where bees have been declared a nuisance. As usual, Mr. Newman has dosed the mayors, city attorneys, members of city councils, etc., with copies of decisions from supreme courts, touching similar cases, and in nearly every instance they have had their usual and salutary effect, and the result is that the cases have either been dismissed without recourse to law, or the position of the bee-keeper has been strengthened.

The showing in the report is good; and although I have criticised General Manager Newman for opposing amalgamation, I have been and am willing now to acknowledge meritori-

ous work. While my sympathies go out toward the new Union more than toward the old, I wish to give the old National all the credit it rightly deserves.

The financial report showed a balance of \$541 at the close of last year. After deducting court expenses, lawyers' fees, depositions, printing, postage, salary of Manager, and incidentals, this leaves a net balance on hand of \$327.

From this it would seem that the amount in the treasury is being rapidly whittled down. To my notion it is much better to have the funds *used* for legitimate work than to have a big bank account, and correspondingly less work done. Since the organization of the new Union, the old one has "got on an extra hustle;" and even if the new Union had accomplished no more, it has seemed to spur up the old Union to more and better work.

The net balance in the treasury of the new Union is \$182, according to the last report. At the present rate one will soon be as strong as the other, both in finances and in membership. Indeed, I believe the active membership of the new Union will prove, ere the year is out, to be greater than that of the old one. But comparisons are odious; and I do not mean to say in this connection any thing that will reflect upon either organization. While I believe there is no need of two Unions, yet if they will not now amalgamate then let us take hold and make them both such a success that they will be worthy of each other's esteem and affection. Mayhap *some day* they will be married, and go to housekeeping in matrimonial peace. I crave the honor of holding out the olive branch.\*

#### THE MARKS-HOFFMAN METAL-SPACED FRAME; CLIFTON SPRINGS SANITARIUM.

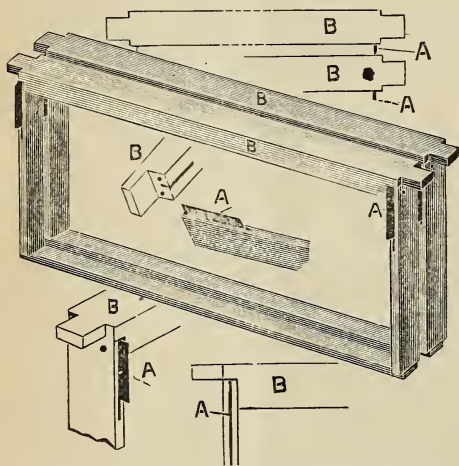
AFTER leaving Buffalo I made my way direct to Clifton Springs sanitarium, at which place Mrs. Root and master Leland were stopping, visiting old classmates and friends. I would remark, in passing, that this is a Christian institution, located in a healthful climate, in the region of sulphur springs. The sanitarium makes a specialty of nervous diseases, and hither many a business man with impaired health hies away to this quiet retreat, often taking his whole family. Dr. Foster, the founder, is most heartily in sympathy with Christian missions, and at his institution missionaries find rest and health, and at the same time spiritual uplift.

The buildings are magnificent in all their appointments, and are fitted with the latest equipments in the way of massage machinery, baths, sun-bath rooms, and every thing else that can possibly make a patient well. One of the mottoes of the institution seems to be, "Wash and be clean;" and although neither myself nor family went there as patients, we were invited to enjoy the luxury of a sanitarium bath. I will not attempt to describe the various ways in which these are taken; but I will say that when I took my bath my first thought was that they intended to scald me alive; but when I was told that the water registered only 101 degrees I could scarcely

believe my eyes. I sat in this water up to my chin, after which I was requested to stand under a spray that was hot to start on, and cooled off gradually.

Near Clifton Springs is the home of Mr. W. F. Marks, Chapinville, N. Y., and with my bicycle I started off to find my bee-keeping friend. Mr. Marks, as our readers may already know, is one of the bee-keepers who has so earnestly championed *Apis dorsata*. He is the leading bee-keeper of his vicinity; and if I was ever convinced of that fact it was when I was inquiring the way to Mr. Marks' home. First I asked for Chapinville. Nobody seemed to know where that was. Finally I happened to mention to one person that I wished to find W. F. Marks. Why, yes, he knew the man, and then directed me on the route. But I missed my way, of course: but from that time on I inquired for Mr. Marks, without reference to town or any thing else; and although I was sometimes seven or eight miles away, everybody knew W. F. Marks. Why! he was the bee-man.

In the course of an hour I found myself in front of his beautiful residence, the lawn nicely mowed, and every thing kept up in modern style. Fortunately enough, Mr. Marks was at home; and although he and I had in the past differed on certain policies, he welcomed me most cordially.



THE MARKS-HOFFMAN METAL-SPACED FRAME.

Mr. Marks, as I found, has done some hard work in trying to secure the enactment of a law forbidding the spraying of fruit-trees while they are in blossom. He had almost succeeded; and although defeated in the first round he is preparing for another, and I have no doubt he will succeed with the next legislature.

Friend M. showed me into his apiary and workshop. I believe there is nothing that interests me more than to look over bee-fixtures; and in his shop I found something that interested me at once.

He had used various styles of frames; and when some years ago I began to talk about

the advantages of the Hoffman he tried them, but found that, owing to the excessive amount of propolis in his locality, it was not entirely satisfactory. He liked the principle of the Hoffman frame, however; and to obviate the gluing he used metal projections. The accompanying engraving will show the idea.

The metal spacers are simply pieces of strap iron chopped off in lengths of  $2\frac{1}{2}$  inches. These strips of iron are let into saw-cuts on one side of the end-bar. It seemed to me that these little pieces of strap iron would pull out; but if the strips of iron fit tight enough in the saw-cuts, Mr. Marks assured me they would hold their position, or at least had done so in his case. The spacers, instead of reaching half way, fill up the whole space between the frames, as shown in the diagram, A, A, at the top of the cut. Friend M. prefers to have both on one side of the frame, rather than on each diagonally opposite corner. If I were to use them I think I should prefer them diagonally opposite, so they would admit of turning the frames end for end in the hive. When the spacers are both on one side, the frame must be put into the hive always the same way to, because it would not do to put the two plain sides of the frame together.

I wrote to Mr. Marks, asking him to tell in his own words what he thought of this particular frame, and here is what he says:

Referring to my metal-spacing brood-frames, all bee-keepers are so familiar with self-spacing frames that a description or cut of this frame is undoubtedly all that is necessary. I have not any thing to say, any more than that they give me perfect satisfaction. I find metal spacers, like the tin rabbet, less liable to be fastened with propolis. These have a  $2\frac{1}{4}$ -inch bearing, insuring the uniform and accurate spacing of the frames, both horizontally and vertically, or, in other words, when the frames are wedged the bottoms and ends will be spaced uniformly, as well as the top-bars; with a narrow spacer the top-bars will be accurate, but are not the bottoms and ends *very uncertain*, to say the least? I like the end-bar in any frame the same width as the top-bar.

Your section discussion prompts me to say, before closing, that, according to my observation, sections with full opening top and bottom are always better filled than those with curved opening. The no-bee-way section, now that you propose putting the separators together at the factory, will, I believe, be quite generally adopted. I wish now you would get some hard wood to take the place of basswood for sections. I say *hard wood*, because it is easier to scrape and less liable to stain. I except basswood, because it should be a crime for bee-keepers or any one else to use such a valuable honey-producer for any such purpose.

Chapinville, N. Y.

W. F. MARKS.

Perhaps some of our readers may wonder why we do not offer this as an option in our catalog for 1898. First, we should like to see it tried a little more. Second, it costs a little more than the regular Hoffman; and whether bee-keepers will be willing to pay the extra difference is something of a question. Again, third, the Boomhower stapled frame seems to offer nearly all the advantages of the Marks' frame, at much less cost.

After having a delightful chat I mounted the wheel again and was soon back to Clifton Springs by another and more direct route. Mr. Marks had carefully marked out on a piece of paper the several turns I was to take. As I followed his directions implicitly I made the return trip in about half the time it took me to go out.



## OUR HOMES.

[I have for some time had in mind making a protest against war as a means of settling troubles between nations. While I knew, however, that the gospel of Jesus Christ was equal to the task of settling all troubles in this whole wide world, I felt that I was too ignorant of political geography to make such a protest understandingly. While I was revolving these things in my mind, you can imagine with what interest I listened to the following sermon from Rev. B. G. Mattson; and I have, by his permission, given this sermon in place of my usual Home talks. May God bless the message. If any of the readers of GLEANINGS would like copies of it for free distribution, I shall take pleasure in sending as many as they can use, postpaid.—A. I. R.]

He shall judge between the nations, and shall reprove many peoples; and they shall beat their swords into plow shares and their spears into pruning hooks. Nation shall not lift up sword against nation, neither shall they learn war any more.—ISA. 2: 4.

It is the grand distinction of the Hebrew prophet that he placed the golden age in the future. It is still further a mark of his spiritual greatness that he should characterize that golden age, not by the triumphal return of the conqueror, laden with spoils and followed by a long train of captives, but by the simple arts and industries of peace.

In this remarkable prophecy of the golden age to come, the seer discerns that there will still be national differences to settle. The world will not yet have reached that beautiful dead level of non-individuality, apparently so desired by Mr. Bellamy. But these differences, when they arise, will find an entirely new way of settlement. The sword will be too busily engaged in cutting the soil to turn aside to its obsolete occupation of letting human blood. The spear will be too deeply engrossed in pruning the wilderness into a fruitful land. It will have no time to go crashing through helmet and shield as it did in the once barbarous but now almost forgotten time. No: when these differences arise, as they surely will, the nations shall with one accord hasten to appear before the new central figure of the golden age—Him who is wonderful in counsel, and who wears the title of the Prince of Peace. "He shall judge between the nations, and shall rebuke many peoples."

Seven centuries passed, and the Prince of Peace appeared. So much more wonderful in counsel was he than even the prophet foresaw, that it was truly said of him, "Never man spake like this man." But did he fulfill his other title of the Prince of Peace? Did he banish war? Two millenniums and more than half of a third have passed away since the prophet foretold the plowshares and pruning-hooks, yet still the sword and spear are the supreme arguments in the larger part of the Christian world; and to learn the trade of war is still the cherished ambition of Europe's choicest youth. Was the prophet wrong in his ideal? If he was, then He who fulfilled the prophecy was under the same delusion, for *he* said, "My kingdom is not of this world.

If my kingdom were of this world, then would my servants fight; but now is my kingdom not from hence." To this he committed himself—to a kingdom within kingdoms—the unworldly kingdom running through all the worldly kingdoms, and the principles of this unworldly kingdom constituting the divine court of arbitration before which he is to judge between the nations.

Unmistakably, if the prophet meant any thing he meant that war must cease to hold its place as a court of last appeal; and with equal clearness Jesus also meant the same thing. But we Christian people have been slow to interpret our Teacher. We have long conceded to him authority over the individual, but have only in recent years begun to believe he has any authority over humanity in the mass. It is from him I make my starting-point in raising my voice against the arbitrament of war.

1. Jesus looked upon human life as a sacred and precious thing, and this the Christian world accepts in its individual application. For example, we need but to remember how the spirit of Christianity brought forth the hospital and the asylum as means whereby human suffering might be reduced and human life prolonged. We need but to note the righteous indignation of the Christian sentiment of the land which has practically buried dueling, and is now being exerted against prize-fights and lynching as equally embodying the spirit of lawlessness and murder. And now even football seems in danger of falling under the ban as an outlaw. All this indignation is directed against a common tendency; namely, toward cheapening the sanctity of human life.

If these values hold for the individual, why do they not also hold for the mass? Is there any thing in the teaching of Christ to limit it to such a narrow range?

2. The logic of the teaching of Christ plainly involves an uncompromising condemnation of the war spirit, not only because it tramples upon the Christian principle of the sacredness of human life, but still more unsparingly because the war spirit feeds the worst passions of the human heart. "He that hateth his brother is a murderer." To this every Christian who is thoughtful enough to reflect upon the deadly issues of hatred gives earnest and solemn assent. But the logic of such teaching presses on to the conclusion that *national* hatred finds its issue in national murder.

Douglas Jerrold says, "What a fine-looking thing is war! Yes, disguise it as we may, dress and feather it, daub it with gold, huzza it, and sing swaggering songs about it, what is it nine times out of ten but murder in uniform—Cain taking the sergeant's shilling?"

What a frightful train of moral evils follows in the course of war!—rape, plunder, cruelty, lust, and all disintegration of moral fiber! I do not say this is true of all soldiers, nor do I say that war is never without just cause upon one side or the other. I can not go as far as do the extreme peace champions of the Quaker faith. There are obligations of self-defense which are sacred. These call for the de-

fense of our homes and our country, and are as morally justifiable as would be the act of a man who kills the villain who seeks the life of his wife or little ones. But wars which arise to settle a point of national honor, in the diplomatic use of the word, are exactly analogous to an affair of honor (or, rather, of dishonor) between individuals. Thank God that the settlement of such affairs by the duel is practically extinct! There has come about a healthy revolt of the moral sense of the world, always excepting those German universities where the moral sense is the subject of theoretical rather than practical exercise, and where dueling is in most high honor.

When we see so plainly the moral grounds on which rests the abolition of the personal duel, can we for a single instant stop short of applying the same conclusion to the national duel? What better right have a hundred thousand men to resort to bloodshed over a point which, even by the irritable code of diplomacy, can touch each one but indirectly, when at the same time a private conflict on the same grounds is declared by the Christian sense of the world to be an immoral and disgraceful thing? Or, to put the analogy in still closer terms, what better justification have two kings or two parliaments, using each a hundred thousand men as weapons, to enter into a deadly combat over a point of honor or aggression, than have two private citizens in resorting to pistols at ten paces as a settlement of a dispute at cards?

The personal duel and the national duel must be called by the same name—murder by agreement, or, rather, murder by disagreement.

3. Again, it has long been argued that war is the great civilizer, and it has been considered conclusive to point to the fact that no history of civilization can be written without recording an almost unbroken succession of wars.

This is as much as to say, after the manner of those who unwittingly tamper with that rusty old kicking musket called "inductive logic," "Wars have occurred, and progress has been made in civilization, therefore wars have produced civilization." But the old gun is just as liable to recoil, and prove equally well that war is the *end* of civilization, since the two have gone hand in hand. One can prove any thing by such logic. The old astrologers had just as good a right to the conclusion that a certain star was the cause of a certain man's destiny, because of some observed connection in time between the man's birth and the planet under which he was born, or of its conjunction with another planet. But whether it has ever been true in the past that war has aided and not in reality retarded civilization, we do not need to consider now so much as we need to be sure of the fact that it never can be true in the future.

War is an anachronism. It is out of date. War is a relic of barbarism, as truly as is the voodoo superstition of the Louisiana negroes.

Do we seek for a cause of the advance of civilization? Civilization has come about just in proportion as brute force has been made subordinate to intelligence. It is intelligence

that has built cities, cultivated fields, improved machinery, increased production. It is brute force by which all these are quickly and easily destroyed.

The war spirit is an anachronism because it seeks to enthroned brute force, and to lay tax upon the finest powers of the intelligence of men in order that brains and skill may be the servants of the war spirit.

Co-operation is the highway along which the car of progress moves. The world has become much smaller than it used to be, and consequently the nations are much closer together now than formerly. Therefore if this war tendency is not checked it must inevitably retard progress, for war is the death of co-operation. Wars henceforth can result only in tearing asunder and upheaving the cemented blocks of national co-operation which are the paving of that highway. Wars can succeed only in blocking, retarding, and overturning progress. War is the world's road agent. At the cannon's mouth it relieves prosperity of her valuables, and with scientific coolness breaks open and rifles the treasure-safe of peace.

4. The application of greater intelligence to war combines with this ever increasing nearness of nation with nation to render war far more destructive than it ever was in former times. The growing science of war makes it more deadly, and the identity of interests of one nation with another makes war more far-reaching in its consequences.

I am not sorry that this is so; perhaps in no other way can the world be made to realize the awful folly of war. When the folly of it becomes plain, perhaps then we shall by degrees come to see also that war is the hideous *crime* of nations.

Every sober-minded statesman in Europe, worthy of the name, deploras the awful wrong of war, and dreads to precipitate its calamity; yet Europe is hardly less than one vast armed camp, and the strange policy of every European nation is to seek to maintain peace by the continued increase of its armament. Strange method! What kind of peace must result? Only a strained and artificial peace. Quiet, it is true, but not that of a home, a school, or a church. Rather, it is the ominous silence of a powder-magazine. A single match will produce an explosion; and that explosion must bring disaster to a whole continent. An armed peace is no real peace, because the principle of peace is not recognized. An armed peace is merely a suspension of hostilities. There is but one true basis for peace, and that is *the armament of reason*.

5. Here is the ground for the appeal to arbitration. It assumes two things. 1. That justice and not robbery is what nations desire; 2. That the enlightened reason of impartial statesmen is capable of deciding disputes justly. Sooner or later nations must come to these assumptions, not only as they have already done for minor questions, but also for the large ones; and the ultimate outcome must be the abolition of the trial by war, and the disbanding of the standing armies. When the court of arbitration for the world has be-



come a fact, with what amazement will future generations look back upon our inhuman custom of killing each other in order to settle a boundary dispute!

Do not think this is a dreamer's prophecy. It has a good deal stronger backing than the so-called non-resistance vagary of Quakerism. Here in the United States, with three thousand miles of water between us and European complications, we have a clear field for the growth of the arbitration principle. Ever since the Jay treaty in 1794 settled a question of boundary, this principle has been gaining ground. It has carried us through many types of international controversy, and is chiefly responsible for our long peace with Great Britain. The single example of the Alabama arbitration is sufficient to remind us how severe a strain was placed upon this principle, and how nobly it stood the test; and yet the Alabama controversy involved questions of both right and honor to both countries. Who can measure the saving to England and America, both of life and wealth, by the avoidance of war in this single instance? Had war ensued, the real issue would have been at once lost to sight, for then, instead of being a question of right or honor, it would have become a mere question of prowess.

How great is the real advance toward general acceptance of arbitration is shown by the fact that, in the past one hundred years, the United States has been engaged in sixty-eight\* cases of arbitration, and forty-eight of these were cases where her own interests were directly involved; yet all have been peaceably settled.

In the face of these facts, is it not plain that such a record redounds more to the glory of the fair name of our nation than all the battles since the Revolution?

The fact that confidence in the arbitration principle is slowly but surely gaining ground in this country is a sure indication that the mission of the United States among the great nations of the world is to teach this last and greatest lesson in the science of government. Shame upon the jingoistic folly of the newspapers, and many of our congressmen! This mere braggart talk of war is as revolting as it is insane. "Cause or no cause," they cry, "we have been a peaceful stay-at-home long enough. We can whip the world, and it is time we showed our spunk." I appeal to the common sober sense of every fair-minded citizen.

What religion demands, reason also demands — the cultivation of an anti-war conscience. This is the only cure for the insani-

ty of "jingoism." This is not mixing religion and politics, but is simply an attempt to emphasize the fact that an anti-war conscience is an enlightened conscience, and that an enlightened conscience is fundamental to both religion and statesmanship.

The day must come when the Sermon on the Mount will be regarded not only as an utterance of surpassing religious value, but as a state document as well, whose positions clearly outline the only true policy for the relations of the nations of the earth. Through the blessed truth it holds, the prophecy of Isaiah shall come to pass in a "World's International Court of Arbitration," for then shall these words be fulfilled: "He shall judge between the nations," and, "Neither shall they learn war any more."

#### THE CIGARETTE BUSINESS; A STATEMENT FROM PROF. WILEY, UNITED STATES CHEMIST.

Perhaps I should explain to our readers that I submitted to Prof. Wiley the matter in regard to tobacco, found on page 25, asking him to tell us what is put into cigarettes, and his opinion in regard to the matter. Below is his reply:

U. S. DEPARTMENT OF AGRICULTURE,  
DIVISION OF CHEMISTRY,  
WASHINGTON, D. C., Dec. 28, 1897.

*A. I. Root.*—I had occasion a few years ago to look very carefully into the composition of cigarettes, especially in regard to the statements which have been so frequently made, that they contain opium and other poisonous matters foreign to tobacco. After a careful examination of all the standard brands of cigarettes on the market, I was able to say positively that these statements were not true. I doubt if there is one grain of opium or other poisonous matter, not natural to tobacco, in any of the cigarettes now existing in the United States.

The baneful effects of cigarettes on young persons are due to the natural poisonous principles of tobacco, especially nicotine. The cigarette affords the best medium for conveying to the system the volatile nicotine during the process of smoking, so that a given quantity of this poisonous matter will produce a greater effect upon the system when smoked in the form of cigarettes than in any other way.

It is not necessary to look further than this one important point to secure all the argument necessary to show the injurious effects of cigarette-smoking on the young. The statement of the case is only weakened by alleging, as facts, opinions which have no foundation.

I have read with much interest the galley-proof of the article which you sent. I am heartily in sympathy with any movement which will prevent the boys of our land from indulging in such a pernicious habit as cigarette-smoking. In regard to carrying the crusade further, as you propose, it is a matter in which my opinion is of no value.

Respectfully,  
H. W. WILEY,  
Chief of Division.

Our readers will notice that this analysis was made several years ago. If cigarettes do not contain opium or some other similar poison at the present time, I am very glad to know it. There is something very strange in regard to the craze for cigarettes, as it is certainly more enticing than the ordinary tobacco habit. The above statement from such a source, it seems to me, is enough to frighten the fathers as well as the mothers, teachers, and Christian people of our land. Permit me to ask again, especially after having read the statement above, whether the government of

\*Had some one asked me how many times the United States had been engaged in settling international troubles by arbitration, I should have said perhaps a dozen; and when I was told that already 68 cases of this kind were recorded in our comparatively short life as a nation, I could not but breathe a little prayer, "May the Lord be praised!" There are other troubles to be met — God only knows how great and how many; and it may be, as our brother has said, that there will be cases where it must be war, just as we would use firearms to put down and subdue a gang of train robbers. But let us be sure that, where there is any possibility of resorting to arbitration, such means are well and faithfully tried before guns or other firearms are called into requisition.—A. I. R.

the United States should offer premiums to our young farmers for papers on growing tobacco, and the manufacture of cigars and cigarettes. May God help us.

#### OFFERING RECIPES FOR SALE.

The recipe below is not a very bad swindle, after all, for the price is only 10 cts. Instead of obliging each one of our subscribers to send 10 cts., we will send it to you *all* at one clip, and then it will not cost you a cent. Here it is in full:

#### HOOPER'S CRYSTAL HONEY FORMULA.

PRICE 10 CENTS.

The following four ingredients are used in manufacturing the formula:

- |                      |                |
|----------------------|----------------|
| 1.—Boiling water,    | 1 quart.       |
| 2.—Granulated sugar, | 6 pounds.      |
| 3.—Powdered alum,    | 1 teaspoonful. |
| 4.—Lemon,            | 1 thin slice.  |

Place one quart of water on the stove and let it boil; remove, and then add the sugar, correctly weighed, with the teaspoonful of alum, and one slice of lemon one-eighth of an inch in thickness—then place on stove and allow it to boil together from 2½ to 3 minutes, no longer, stirring constantly to prevent burning. Skim off all froth or foam during the boiling, then remove, and strain through a piece of clean muslin or lawn goods. When cold, place in jugs, fruit-jars, or tumblers, and keep it covered.

It will be found in taste and appearance precisely like virgin honey when strained. It is superior to syrups or molasses for all purposes of cooking for domestic use. It can be put up for sale in attractive glass packages, or sold in bulk in an extensive way. It may also be sold in barrel lots for table syrup, giving it any name or trademark you may secure.

There is another thing to be said in favor of this recipe—it is all made of wholesome ingredients unless it is the alum, and I do not suppose that a teaspoonful of that in a quart of honey would do any particular harm. Will some of our doctors tell us about it? Like all other recipes of this class, the above is not new. When I was a schoolboy, almost fifty years ago, I sent a dollar for a recipe for making honey, and it was almost exactly like the above, except that it did not have the lemon. No doubt this would be greatly preferable to the drugged syrups to be found in the market.

#### SPOT CASH; MAKING PRESENTS, ETC.

In a recent number of the *Busy Bee* our friend Abbott has given us a talk on paying cash down for what we want, and I really wanted to copy it entire, but want of space forbids.\* I hope he will give the same talk at farmers' institutes all over our land. At our house we pay cash down, and have done so for years; but we just have to fight sometimes to keep the meat-man, grocer, and others from starting an account. In fact, we have had to tell the boy when he brought the meat, and said he did not know the price, that we could not take it unless he could tell how much it was worth, and took his pay.

One objection to spot cash is that it is so inconvenient to make change, especially for

butter, eggs, meat, laundry, and other things that require pennies to make the exact change. Mrs. Root and I are getting old enough so we often get tired out before the day's tasks are done. I have noticed how often mamma goes all around inquiring for a nickel or a penny or two to pay the meat-man. Well, I have been threatening for some time to have a dishful of nickels and pennies. In fact, I have talked about it, but did not get at it. This morning I got a neat little china cup out of the counter store, and filled it with pennies. Another one was pretty nearly filled with nickels. Then I carried along a handful of dimes and gave them to Mrs. Root for her new year's present. It is a little late in the day, but never mind. She appreciated the gift. They are to be kept in mamma's bureau drawer, and every one of the household will know where to get them for Sunday-school and church, or to pay little bills. Do you say, "Brother Root, it may be easy for you to keep a dishful of coin of the realm in that way in your house, but we can not do it in our home"? Wait a bit. There was recently an estimate in one of the dailies, to the effect that more than five millions of dollars was paid out for holiday presents; and the statement was made that at least half of that amount was for things that people did not want or need. Now, instead of giving your wife a set of silver spoons,\* a book, or even a new dress, give her an assortment of pennies, nickels, and dimes to make change with. You can put in some quarters if you choose, and then you see if it does not make her happy. At any rate, such an investment will not be like the silver spoons or book, for *it* can be used to pay debts with any time you choose; and I am sure it will save the dear wife many steps, and much worry and trouble, if you keep those little dishes of nickels and pennies constantly replenished. It need not cost you any more than it does not to have them—that is, if you have a good and prudent wife. Think it over, talk it over with your wife, and see if Uncle Amos has not struck a good thing. By the way, it gave my heart a throb of joy when Mrs. Root and I decided that it would be perfectly safe for every one of our household, even the children and grandchildren, to have access, without any necessity of lock and key over the pennies and nickels. If a tramp breaks in and finds them we shall be that much out; and under some circumstances it may be best to have this little arrangement under lock and key.

Your letter of the 13th inst., with two queens, arrived here on the 21st. Queens are in first-class order, and appear to be a fine breed. We presume by their color that they are daughters of imported mothers. Economy being the order of the day here, we took the comb honey out of the cages and invited two friends to dine on American comb honey.

JAMAICA BEE-SUPPLY CO.

Mandeville, Jamaica, W. I., Oct. 23.

\*I really think this one paper is worth the price of his journal for one year; and, by the way, Ernest reminds me that whoever sends us a whole dollar for GLEANINGS, and does not ask for another premium, may have the *Busy Bee* one year free of charge. But you must mention it when you send your dollar.

\*I once offended a good friend of mine because I objected to selling him a set of silver spoons for his wife, when I knew he had not paid a grocery bill, which I feared he never would pay.





#### GARDENING FOR JANUARY.

Of course, in the North all gardening must be under glass. The sun is now day by day stepping northward, and it is a real enjoyment for me to watch the spot where it goes down every night when we have a clear sunset, and note the daily progress toward summer time. We are now using 135 sashes with whole glass, and about 25 made of glass slats. The slats are about 2 inches wide, and are placed from  $\frac{1}{8}$  to  $\frac{1}{4}$  inch apart. These small openings are completely closed when the weather is frosty. As soon as we have a thaw they are open, which gives the plants air, and such sashes work all right without any handling for very hardy stuff such as strawberries, spinach, cold-frame cabbage-plants, onions, etc. It does not answer so well with lettuce, unless some additional covering is put on when we have very severe weather. Just now we have arranged our beds so that every fourth or fifth sash is slatted, and it works beautifully, especially while the sun is so far to the south. The sashes are never moved at all unless it is to give them water when we have a summer rain. The greater part of our beds are cold; but where we have steam heat underneath, as I have many times explained, every thing moves on splendidly. Our Earliest and Darling strawberries are already budded to blossom.

We did not have very much sunshine this winter till the new year came in; but since then we have had almost as many bright days as cloudy ones, and every thing begins to respond accordingly. One of our hotbeds is shaded from the winter blasts by evergreens; and when there is a bright sunshine over in this protected nook, I enjoy working among the strawberries, right in the month of January, as much as I ever enjoyed gardening in April or May. Of course, things have to be watched, and they must be lovingly kept in mind. I have sometimes thought it made things grow just to look at them often, especially when these loving looks are coupled with thanks from the heart to the great God above, from whom all blessings flow. These new potatoes in the greenhouse are now, some of them, six inches high, and we are thinking about making cuttings of some of them.

#### LATE-PLANTED POTATOES BETTER FOR SEED THAN THOSE PLANTED EARLY—WHY?

We clip the following from a recent number of the *Field, Farm, and Fireside* :

Repeated observation shows that a tuber that has not reached full maturity will retain its moisture, and for many months continue as firm and as solid as when dug, under conditions where a ripe one will not. Such a potato often, on being cut for seed, will crack ahead of the knife, it is so brittle, and the juice will run from it as from a newly dug tuber. It is in just the condition to give its sprouts the necessary amount of moisture to start a strong, thrifty plant, suited to produce a bountiful crop.

The fully ripened tuber, on the other hand, has already passed the prime of life, and is on the decline, as soon as wilted. Its sprouts have not the necessary vitality to give them a proper start in life, any more than have the offspring of aged animals, or the buds of a shrunken currant-cutting.

It is a well-established fact in animal husbandry, that the offspring of animals that have only reached the full flush of maturity are much thrifter than those of animals that have begun to go down the decline of life.

Our experiments for years past have satisfied us that, at least in our locality, late-planted potatoes produce better seed than those planted so early that they come to full maturity. Yes, where the tops are, many of them, killed by the frost, such potatoes when dug will keep in the spring without sprouting, much better than the early grown, or potatoes that reach full size and maturity. Our crop of seed potatoes in our cellar is nearly all the product of potatoes planted the last of June or the fore part of July. For prices, see our new catalog.

#### SOME OF THE SMALL FRUITS RECENTLY ADVERTISED.

*Mr. Root.*—I am interested in new fruit, and have been trying some. I have had the strawberry-raspberry for two years. It will soon spread all over the garden. It commenced to blossom about the first of July, and blossomed till frost came. I never saw a berry of any kind on it. We had all kinds of weather in that time—plenty of rain, hot weather, and dry weather. The Mayberry won't even stand the first frost. The Logan berry had two or three berries on this year. I think if it would stand the winters it might raise a few berries. The wineberry I have had three years, and last winter I covered it all, root and branch. A few canes lived over winter. They blossomed; and when the blossoms fell off they closed up in a wine-colored burr. I waited a good while to see them open, but not a berry did I see. I dug in to see what was in the burr, and it looked just the same as when it closed up. The Rocky Mountain cherry is not what it is advertised to be. It is worse than what we call our choke-cherries here.

The Bismarck apple is advertised a great deal in catalogs. Now, I should like to know if you know any thing about it—whether it is like the other new fruits or not. I have another new fruit which they call the evergreen blackberry. It was brought from Germany some years ago, and planted in Oregon, and is now sold by the Des Moines Nursery Co., Iowa. I paid \$2.50 for one plant. I have not had many berries yet. It doesn't seem to be hardy. They commenced to ripen about the 10th of August, and kept up ripe berries and blossoms till frost. If you know any thing about this berry I should like to hear from you.

Wakefield, Neb., Nov. 26, 1897.

R. CHINN.

Why, friend C., your report is a discouraging one indeed. Are you sure your locality is favorable for small fruits in general? Do you get good crops of the ordinary raspberries and blackberries? We have had a few strawberry-raspberries; and the Logan berry has also given us some nice luscious berries. We have had enough wineberries for a taste; but it has turned out a good deal as I have described them. You probably know of my report on the Rocky Mountain cherry. We received a box by mail, however, that were very much better than our own. In the absence of other fruit they might have been very fair for cooking, but certainly they would not compare with cherries that grow on trees, for eating out of the hand. We have one of the Bismarck apple-trees, and it blossomed and began to bear fruit when it was only about two feet high. The blight struck it, however, and it killed it almost to the ground. But this could hardly be called a fault of the tree. I have

never seen the Oregon evergreen blackberry ; but I believe it is pronounced by competent authority as of "no account." Friend C., I would not, if I were you, ever again pay \$2.50 for a single plant of *any* new fruit, no matter how much the catalogs boom it. Better stick to the good kinds that you find in your neighborhood. These would be pretty sure to succeed, while the new things are always *extremely* doubtful.



The third edition of 10,000 copies of Danzenbaker's book, "Facts about Bees," revised and up to date, with new cuts, is now on the press, and will be ready for distribution the last of this month. It will be sent free with 2 cents to pay postage. See Danzenbaker's advertisement elsewhere.

#### CHOICE STRAWBERRIES.

It is a little out of season for strawberry-plants, but you will want to know where to get them when the time comes. We have printed for C. N. Flansburgh, of Leslie, Mich., a neat catalog which he will be pleased to mail to those who write for it. His ad't appears in this issue.

#### MAPLE SUGAR AND SYRUP.

We shall be prepared as usual to supply these products at low prices, as we are right in a good maple section. If you expect to buy any this spring it will pay you to send for our prices. We have on hand a little stock of '97 sugar which we offer as follows: No. 2 at 7c per lb; No. 3 at 6c; 50 lb. lots at ½c per lb. less. First-quality syrup at 90c per gal.

#### A NEW BINDER FOR GLEANINGS OR ANY OTHER PERIODICAL.

We take pleasure in saying that the Monitor binder, advertised in this issue, is not only the neatest and most convenient binder, but the cheapest thing we have ever seen or heard of. It is a real marvel of Yankee ingenuity. It costs only 12 cents for GLEANINGS, and yet it is about the handiest thing I ever saw for the purpose.

#### SEEDS FOR FARM AND GARDEN, FRESH AND TRUE TO NAME, AT PRICES LOWER THAN EVER BEFORE.

We can not just now in this issue give you the reduced prices, but any order you may send us will be made at these lower figures; and in our next issue we expect to give you a revised condensed list of prices. The seeds were grown by the same firm who supplied us last year. Their germinating qualities have already been tested in our greenhouse, and we shall be growing crops from them all through the season.

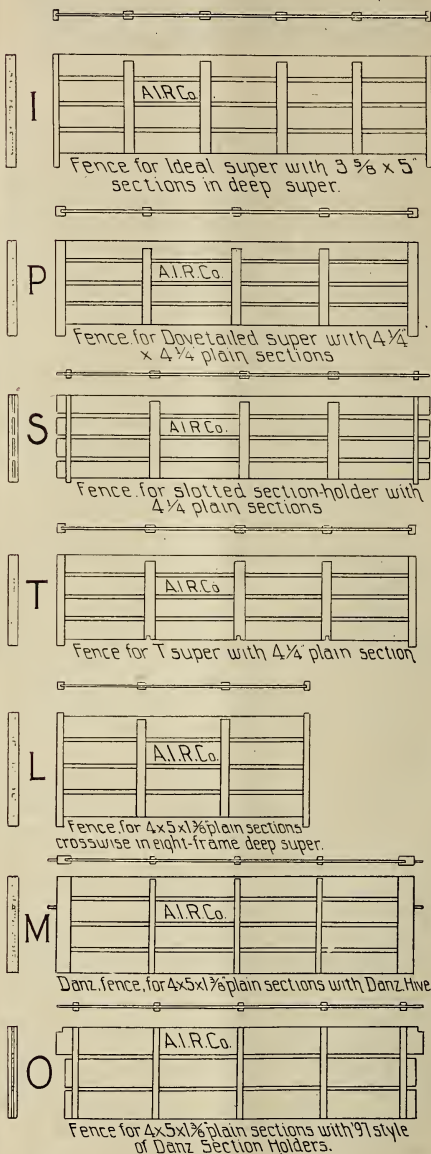
#### T TINS FOR 1898.

We have changed our T-tin machine so that the upright in the tin, as now made, is only ¼ inch high instead of ⅞, as formerly. This is to accommodate the new T fences without cross-slotting them. To use with old-style T tins they must be cross-slotted, as shown in the diagram. In order to work freely we find that this groove must be at least ⅞ of an inch wide or they are apt to bind on the T tins. The plain separators for use in T supers with the new T tins should be fully ¾ inches wide, and from now on we will make them so unless otherwise ordered.

#### FENCE, OR CLEATED SEPARATOR.

The above illustration will make the matter of fences more clear than any amount of description. By a careful study of the detail drawings, and reading-matter under each, you will get a better idea of these fences than you could in any other way except by seeing the samples themselves. The N Danzy fence is just like the O fence with cleats on one side only, and is used in connection with sections 1½ wide, with one plain side and one open-cornered slotted

side. We do not recommend this arrangement. The spaces between the slats should not be over ¼ of an inch; and as it is practically impossible to maintain that space absolutely accurate, and it is much safer to



have the space less rather than more, we are now making the fences with a space of about ⅞ full so as to make sure it does not run over ⅞, and thereby produce ridgy or washboard honey.

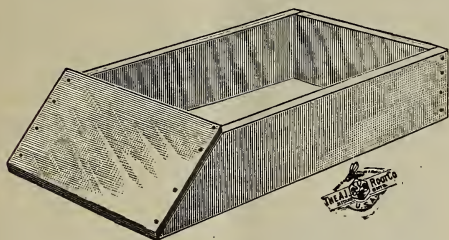
#### OUR 1898 CATALOG.

As we go to press with this issue of GLEANINGS we are just finishing the last page of matter for our 1898 catalog, and within a week after this number is mailed we expect to begin mailing catalogs. Our various dealers are waiting for a supply, and it will take some twenty to twenty-five thousand to furnish them. Our own list numbers about one hundred thousand names, and it will take us some weeks to print and make enough catalogs to go around. The first we have to send will go to our GLEANINGS readers, so that you will receive one just as soon as we can furnish it, with-



out writing for it. If you don't get one before Feb. 1st, you may conclude it has gone astray.

We will mention briefly some of the additions and changes you may look for. The matter of hives has been almost entirely rewritten, incorporating the new fences and plain sections and Ideal super, together with the old styles heretofore furnished. You have your option of the three at the same price.



We offer an improved hive-stand, with slanting front, forming a wide alighting-board, which will be included with any of our hives, for 5 cents each extra—a very nominal price for something so valuable and indispensable as this. The prices of hives in lots of 10 and 20 are slightly reduced, notwithstanding the improvements added. Prices of Danz hives are also marked down a little, although the new fences cost more to furnish than the old style. The Dov. chaff hive has been improved by the addition of a wide hinged and removable alighting-board and deep entrance. Two new options in brood-frames are offered, both of which will be favorites with some customers.

The Hubbard section-press is improved, and made more easily adjustable for different sizes of sections. Cowan honey-extractors have been improved at various points. A brake has been added to the four and six frame machines, which will be found a great convenience in stopping the reel. The list price of these two machines has been marked down \$2.00, the price now being \$18.00 and \$24.00 respectively.

As the Abbott and Bingham honey-knives as now made are exactly alike we have dropped the Abbott entirely, and will sell all as Bingham knives.

An important addition to the list of valuable accessories to the apiary is the Tinker zinc, and in this connection I call attention to two errors which occurred in the first catalogs run off the press. Our electrotypes, by some mistake, got the cuts reversed, so that "Tinker zinc" appears under the cut of "Root zinc," and "Root zinc" under the cut of "Tinker zinc." The cuts were all right when we sent the forms to be electrotyped, and we did not discover the alteration till about ten thousand were run off the press, when we changed it. Another error makes the width of zinc strips, both Root and Tinker,  $\frac{1}{4}$  inch instead of  $\frac{3}{4}$  inch, as it should be, and the length reads 18x19% instead of 18 to 19%. Entrance-guards and Alley traps are now made of Tinker zinc, which provides better ventilation. The entrance-guards have been increased in size to 2 inches square, and the price advanced to 10 cents each, 80¢ for 10.

Shipping-cases have been changed somewhat, and several new sizes added to accommodate the plain sections as well as the 4x5 and 3 $\frac{1}{2}$ x5.

Prices on several of our standard honey-packages, both glass and tin, have been considerably reduced.

The price of the A B C of Bee Culture has been changed to \$1.20 postpaid, or an even dollar when sent with other goods by express or freight at your expense. Three of our rural books have also been reduced in price 10 cents each.

### CONVENTION NOTICE.

The Ontario Co Bee-keepers' Association will hold its ninth annual convention at Canandaigua, N. Y., Jan. 27, 28, 1898. An interesting program is in course of preparation. All are invited.

RUTH E. TAYLOR, Sec.

The Vermont Bee-keepers' Association will convene at the Van Ness House, Burlington, Jan. 26 and 27, 1898.

M. F. CRAM, Sec.

West Brookfield, Vt.

### KIND WORDS FROM OUR CUSTOMERS.

Please don't curtail the editorial department of GLEANINGS. This is always much the best part.  
Hyde Park, N. Y., Dec. 10. A. T. COOK.

Inclosed find 14 cts. in stamps, for which please send one pair smoked spectacles to me. I think the two pairs I got just as good as I had paid \$1.50 a pair for here at our local jeweler's.  
Malvern, Iowa, Oct. 29. MRS. ANNIE F. WING.

### STRAWBERRY-PLANTS TO JAMAICA.

The Warfield strawberry-plants arrived in good order, and have had a good rain on them since they were planted. Bees are booming now on "Christmas pop" and other honey-plants, and prospects are very good for a heavy yield of logwood honey, which is our best crop in these parts.  
H. G. BURNET.

Linstead, Ja., W. I., Nov. 22.

### THE WATER-MOTOR AND DYNAMO.

These, mentioned on page 860, will not run a lamp large enough to light a room. The lamps that go with this outfit are at the most only two-candle power, or about the same as the lamp you describe on the same page as used on your bicycle. I write this for fear some of the readers of GLEANINGS may be misled by the favorable notice you give this outfit.

Scranton, Pa., Dec. 8.

L. F. HIORNS.

[Even if all you say be true, friend H., I am rejoiced to see so much of a success for such a small amount of money. With a greater fall of water, or by using a larger quantity per hour, I presume the same machine, or a similar one, would work an eight-candle-power lamp. Many thanks for your report, nevertheless.—A. I. R.]

### "LORD, HELP!"

The prayer which always puts Bro. Root's heart in tune.

"Lord, help!" That is my favorite prayer

In times of trouble and of care.

I may not all the wants disclose;

But these my loving Father knows;

But help I need, and up to heaven

I lift my prayer, and help is given.

"Lord, help!" In sickness, pain, or grief,

That little prayer will bring relief

I may not kneel, or clasp my hands,

Or bow my head—God understands;

He sees and knows my pain or grief,

And helps to bear or gives relief.

"Lord, help!" Wherever should I be

Were I not helped, O Lord, by thee?

Whatever should I do, could I

Not send my secret wish on high,

And know the answer would be given

Right to my soul from God in heaven?

Dear Bro. Root:—I read from the pulpit last Sunday morning the extract from your comment on my poem, and then read the above verses, suggesting that they always use Bro. Root's prayer.

Ann Arbor, Mich.

REV. J. POLLOCK HUTCHINSON.

### Catalog Free. A. I. Root Co.'s Goods

for Missouri and other points, to be had from  
JNO. NEBEL & SON, HIGH HILL, MO.

### CALIFORNIA.

Mountain bee-ranch for sale. Good location; telephone connection with three railroad stations.

D. O. BAILIFF, Banning, Cal.

In writing, mention GLEANINGS.

### Home for Sale—a Home in California.

On account of almost total loss of eyesight I am compelled to offer my fruit-ranch and apiary for sale or exchange. For further particulars address

E. B. BEECHER, Auburn, Placer Co., Cal.

In writing to advertisers mention GLEANINGS.



Binds securely and neatly magazines, papers, pamphlets, etc. Each new number filed quickly and easily. One will hold a year's numbers of GLEANINGS. Strong, handsome, light, and simple. All sizes unfinished. Prices: 12 inches and under, 12 cents; over 12 inches, 1 cent per inch. Postage 3 cents per file extra. Order from  
**S. C. WATTS,**  
Clearfield, Pa.

In writing mention GLEANINGS.

## Prosperity.

It is here and still coming. So are the carloads of bee-keepers' supplies coming from The A. I. Root Co.'s to my distributing points, thus enabling me to sell at their wholesale and retail prices. I keep the best of every thing you need. Send for my illustrated 36-page catalog FREE.

**GEO. E. HILTON,**

FREMONT, MICHIGAN.  
In writing advertisers, mention GLEANINGS.

**MUTH'S HONEY-EXTRACTOR,  
SQUARE GLASS HONEY-JARS,  
ROOT'S GOODS AT ROOT'S PRICES,**

Bee-keepers' Supplies in general, etc., etc. Send for our new catalog, "Practical Hints" will be mailed for 10 cts. in stamps. Apply to

**CHAS. F. MUTH & SON, Cincinnati, O.**

In writing, mention GLEANINGS.



"WATER DOUDER'S AD"

**SEE THAT WINK?  
BEE SUPPLIES.**

**Root's Goods at Root's Prices.**

Pouder's Honey-Jars and every thing used by bee-keepers. Low freight rates; prompt service. Catalog free.

**WALTER S. DOUDER,**  
512 Nass Ave., Indianapolis, Ind.

In writing mention GLEANINGS.

**The A. I. Root Co.'s Goods At Their Prices.**

Including their discounts for goods wanted for use another season. It will pay you to send me list of goods wanted.

**M. H. HUNT,**  
Bell Branch, Mich.

Cash for beeswax.

**No cheap Queens to sell; but the best.**

Golden 5 band, or 3 band from imported mother. Untested, 75 cts.; tested, \$1.00.

**L. BEAUCHAMP, Box 613 San Antonio, Texas.**

In writing advertisers mention GLEANINGS.

## FARM BEE-KEEPING.

The only bee-paper in the United States edited exclusively in the interest of the farmer bee-keeper and the beginner is THE BUSY BEE, published by

**Emerson T. Abbott, St. Joseph, Mo.**

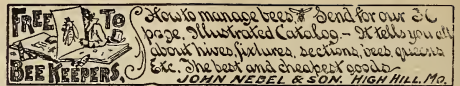
Write for free sample copy now.

## CASH FOR BEESWAX.

We pay 25c per lb. cash, or 27c in trade, for any quantity of good, fair, average beeswax, delivered at our R. R. station. The same will be sold to those who wish to purchase, at 30c for best selected wax. Old combs will not be accepted under any consideration.

Unless you put your name on the box, and notify us by mail of amount sent, we can not hold ourselves responsible for mistakes. It will not pay as a general thing to send wax by express.

**THE A. I. ROOT COMPANY,**



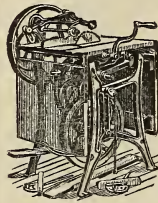
In writing advertisers mention GLEANINGS.

## Dovetailed Hives,

Sections, Extractors, Smokers, and every thing a bee-keeper wants. **Honest goods at close honest prices.** 60-page catalog free.

**J. M. JENKINS, Wetumpka, Ala.**

In writing advertisers mention GLEANINGS.

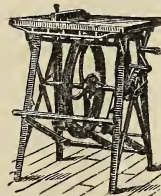


**One Plan with the  
UNION COMBINATION SAW**

Can do the work of four men using hand tools in Ripping, Cutting off, Mitering, Rabbeting, Grooving, Gaining, Dadoing, Edging Up, Jointing Stuff, etc. Full line of Foot and Hand Power Machinery. Sold on trial. Catalog free. 1-24ei

**Seneca Falls Mfg. Co.,  
44 Water St., Seneca Falls, N. Y.**

In writing, mention GLEANINGS.



**BARNES, 545 Ruby Street, Rockford, Ill.**  
When more convenient, orders for Barnes' Foot-power Machinery may be sent to

**THE A. I. ROOT CO., Medina, O.**

In writing advertisers, mention GLEANINGS.

## Rootville Wheels Cheap.

**ONE \$75.00 AJAX.**

Gent's wheel, belonging to E. R. Root; long cranks, pneumatic saddle, large tires, 70 gear, cycloidal sprockets, finished in blue; very easy running; as good as new, nearly. \$80.00.

**ONE COLUMBUS, \$75 MODEL.**

Belonging to J. T. Calvert, 6 1/4-inch cranks, large tubing, flush joints, divisible cranks, cycloidal sprockets; ridden but little. \$30.00.

**ONE \$50 LADIES' AJAX.**

Belonging to Miss Constance Root; as good as new; ridden scarcely more than 10 miles. \$25.00.

**ONE \$100 CLEVELAND.**

Belonging to A. I. Root—the easiest-running wheel, he says, he ever owned; wood reversible bars, clincher tires, keyless cranks, large tubing, flush joints; in fine running order. \$42.50.

**ONE \$150 COMBINATION TANDEM.**

Belonging to E. R. Root, made by the Remington Arms Co.; ridden but little, not over 50 miles all told, and almost new; long cranks, wood handle-bars, large tubing, long reinforced drop forgings; in fact the strongest and most rigid tandem ever built, for only \$65.00.

The Rootville folks always buy the latest bicycles every season; and, desiring to be strictly up to date with all the latest improvements, we offer our wheels cheap. If you want one of these bargains, speak soon. Catalogs and fuller particulars given on application.

**THE A. I. ROOT CO., Medina, Ohio.**